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ABSTRACT

This guide was designed to help vocational education supervisors to link existing resources for program improvement with actual teacher practice. The guide has two general purposes. First, it provides information relating to the special resources available and the challenges faced by vocational education teachers. Second, it helps in four problem areas that are of broad interest to teachers and administrators: (1) how to locate instructional products fitting a perceived need; (2) how to select the best products available; (3) how to choose among alternative ways those products might be disseminated to constituents; and (4) how to help ensure that the products are used most effectively. The guide is organized in four parts. Part 1 contains general information on how to use the guide, how to find instructional products, and how to disseminate instructional products. In part 2, general resources are listed by major curriculum areas and by state. The third part of the guide contains resources and references by the following program and topic areas: agriculture and agribusiness education, business and office occupations education, health occupations education, home economics education, industrial arts education, marketing and distributive education, technical education, trade and industrial education, basic academic skills, competency testing, computer applications, cooperative education, and instructional technology. The final part contains sample organizational abstracts providing information on organizations that are national or of interest to many program areas. These abstracts list the major functions, vocational areas, description, major products, and contact information. (KC)

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GUIDE TO VOCATIONAL EDUCATION MATERIALS AND PRACTICES

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James A. Dunn
Vernon Beuke

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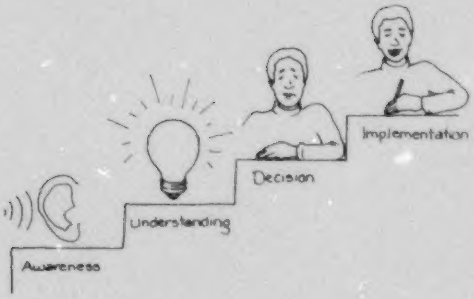
PART I

GENERAL INFORMATION


Awareness
Understanding
Decision
Implementation

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PREFACE

This project was initiated in response to a growing need for assistance in the location and procurement of innovative vocational education curriculum products and instructional materials.

It became evident early on that an exhaustive guide to all relevant resources, public and private, was not practical. Furthermore we discovered that to be most useful the guide should not even try to be exhaustive. Instead, our research suggested it best to focus on *key* resources and how to search out what was needed to make strategic decisions. It is of little value to fill a guide with quickly outdated information regarding price lists and the like.

A project of this scope needs the cooperation of many individuals. This project was no exception. As Project Manager for most of the project, Dr. Dennis Ridley took primary responsibility for identifying key resources, making contacts, and writing the narrative sections of the guide. Dr. Vernon Beuke served in a similar position during the earlier development and conceptualization stages. Kathleen Holmberg of the U.S. Department of Education, Office of Vocational and Adult Education, served ably as our Project Officer.

Other Cornell staff who assisted at various times were: Luann Hartman, who conducted library research and contributed to several portions of the guide; Lois Snyder, who was project secretary for the entire project; Elizabeth Martini, Institute fiscal officer; and Amy Dubin, typist. Our artist was Donna Curtin.

We were exceptionally fortunate to receive guidance and insight from the following individuals who served on the project's Advisory Committee:

- ☐ Larry Case, Missouri Department of Education
- ☐ Melanie Devitt, Indiana Division of Vocational Education
- ☐ Charles Doty, Rutgers University
- ☐ Rebecca Douglass, East Central Network for Curriculum Coordination
- ☐ Joel Magisos, The National Center for Research in Vocational Education
- ☐ Ronald McCage, Vocational and Technical Education Consortium of States
- ☐ Bernard Nye, Ohio State Department of Education
- ☐ Ruth-Ellen Ostler, New York State Education Department
- ☐ Robert Patterson, Texas Education Agency
- ☐ Bob Patton, Oklahoma Curriculum and Instructional Materials Center
- ☐ Robert Sorensen, Wisconsin State Board for Vocational and Technical Education

Additionally, the following persons also served as content reviewers:

- ☐ Douglas Adamson, New York State Education Department
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- ☐ Lee Traver, New York State Education Department
- ☐ Nona Verloo, California State Department of Education
- ☐ Carl Whitman, New York State Education Department
- ☐ Dee Wilder, Florida State Department of Education

Space does not permit us to acknowledge the many state supervisors, state liaison representatives, research coordinating unit directors, and other vocational education personnel who helped us by verifying the information for their respective states, districts or territories. We relied heavily on their judgment to insure inclusion of the most relevant resources. Any problems with the guides, however, remain ours.

In a very real sense the user of the guide is the last link in the development process. As you add new, or locally specific information, you make it even more comprehensive and useful for your location.

James A. Dunn

Director, Cornell Institute
for Occupational Education

You should remember that the different types of instructional products, referred to above, may be found in different places and accessed in different ways. This knowledge can aid you in the efficiency and effectiveness with which you search for specific types of materials and services.

In addition, different types of products require different strategies and approaches for their effective dissemination. This is another way in which this guide provides specific assistance.

Where Do Products Come From?

Vocational education instructional products are available from literally hundreds of different sources.

Dozens of federal and state supported materials centers around the country are responsible for developing and/or disseminating a variety of instructional products.

In addition, a variety of federal government agencies, universities and multi-state consortia are also involved in curriculum development and dissemination.

The key to a successful product search is to identify the agencies most likely to have produced or disseminated the product.

Product development agencies may be divided conveniently into three main types:

1) those with a national clientele;
2) those with a regional (multi-state) focus; and
3) those with a state or local focus.

To supplement this guide, you may wish to consult several other useful references for up to date listings of relevant organizations. Here are four suggestions:

1) *U.S. Government Manual*
2) *Directory of Education Associations*
3) *Directory of Vocational Education Personnel*
4) *Databases and Clearinghouses: Information Resources for Education*

The first two are available through the U.S. Government Printing Office which is referenced in Part II of the guide. The last two may be obtained through ERIC and the National Center for Research in Vocational Education (described below). The respective ERIC reference numbers are ED 208 157 and ED 225 602.

NATIONAL RESOURCES

There are of course a large number of agencies operating at the national level, and many of these are listed in the resource lists which are part of this guide. There are several agencies or groups of agencies, however, of which all vocational education supervisors should be particularly aware.

☐ NCRVE—The National Center for Research in Vocational Education
☐ NNCCVTE—The National Network for Curriculum Coordination in Vocational-Technical Education
☐ ERIC—Educational Resources Information Center
☐ USDE—The U.S. Department of Education
☐ NIE—The National Institute of Education

The following highlights the activities and functions of each organization:

NCRVE is funded under the U.S. Department of Education's Programs of National Significance to address the need for program improvement in vocational education. It responds by developing and distributing its own, as well as state-initiated materials for program improvement. It also fosters awareness of dissemination and utilization through conferences and publications. Occasional papers put out by NCRVE are an important resource for locating and

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disseminating instructional products. NCRVE is an exceptional source of information on products for vocational instruction. It is perhaps the single most important national resource with which you should be familiar.

NNCCVTE is a network of six regional curriculum centers in vocational and technical education. Like NCRVE, it is funded under the Programs of National Significance. Its major functions are to provide for the coordination, dissemination and diffusion of vocational-technical curricula, and to identify current needs for instructional materials. The NNCCVTE centers work closely with each State Education Agency. Each SEA has a vocational education staff member who serves as liaison representative with the appropriate regional center.

ERIC is a national information system which obtains unpublished and difficult-to-find documents in all areas of education and makes them available to school administrators, teachers, researchers, information specialists, professional organizations and students. The system contains a network of clearinghouses in charge of acquiring, selecting, annotating and indexing current printed materials. The Clearinghouse for Adult, Career, Vocational and Technical Education is located at NCRVE. You can obtain literature searches and either microfiche or hard paper copies of reports in ERIC either from ERIC directly or from any one of literally hundreds of cooperating centers.

USDE, the U.S. Department of Education, has the primary role of setting national priorities funding exemplary efforts, providing incentives and resources, and providing technical assistance and training. Their role in instructional materials development and dissemination is primarily in an advisory, referral or facilitative capacity. The primary sponsor of educational research and development (R & D) work is the federal government, and of the several agencies and departments funding educational R & D, USDE is the most prominent. The efforts it funds are responsive to the authorizing legislation, and are directed to needs which are national in scope, rather than regional or local.

NIE is a leading agency for educational R & D within USDE. Established by federal legislation, its budget and priorities largely depend on legislative mandate. These guidelines include sponsoring R & D which is responsive to needs of educational practitioners, and carrying out dissemination activities to insure maximum benefit from the results of R & D. Part of NIE's charge is to fund several regional R & D laboratories and work with them to insure effectiveness of R & D on the regional level.

There are also a good number of additional agencies and organizations both within the government and private sectors which have national importance. In the federal government, for example, there are numerous agencies which fund some educational R & D, within the Departments of Health and Human Services, Education, Defense, Labor, etc. In the private sector, there are a variety of national nonprofit organizations, devoted either wholly or in large part to educational R & D. Among these are the American Institutes for Research (AIR), the Educational Testing Service (ETS), and the National Occupational Competency Testing Institute (NOCTI). Many of the products and services which come out of these organizations are ones that could help you serve the needs of vocational instructors.

SOURCES DEFINED

The private sector is, of course, a vast and diverse source of vocational education instructional materials. However, this guide is limited to those sources of materials which are:

1) government-supported and sponsored,
2) private, nonprofit and of clear relevance to vocational education, or
3) professional associations.

How This Guide is Organized

This guide is organized for convenient access to the information which is most relevant to you at the moment. You are best advised to consult the guide with specific questions and concerns in mind. You can then locate the pertinent sections and find the resources you need most. It is not intended that you read the guide straight through.

TOPICAL ORGANIZATION

Finally, this guide is organized to correspond to the major problems you are likely to encounter. The organization of the narrative sections also reflects the order in which your concerns are likely to come up as you attempt to improve programs. That is: first of all you need to know what products are available and how you can get your hands on them. (Part II supplements this information with specific organizational listings, and Part IV gives detailed information on selected major organizations.) Next, you will want to know how to select the best and most appropriate materials for various classroom uses. Then you will want to help teachers become aware of the materials and motivated to use them. Finally, you will want to be sure they are used regularly and effectively.

Naturally, you will have different concerns at different times. Users of this guide will differ in their needs and concerns. Some of the more prominent contemporary issues, such as basic skills, competency testing, and computer applications are given separate treatment in Part III. Other issues dealt with in the guide may arise only occasionally. Consider this guide to be your resource to be adapted to your own personal needs.

PERSONALIZING YOUR OWN GUIDE

Educational research and development products, and systems for their dissemination, change at a rapid rate. Thus, you are encouraged to use marginal spaces for annotating and entering relevant new information as it becomes available.

You are also encouraged to use the looseleaf feature of this guide to add new product information, including seasonally changing items such as brochures, directions for ordering, etc. Inserting locally pertinent information can make the guide more usable for your own local situation. You can, in effect, **create your own** localized guide.

HOW TO FIND INSTRUCTIONAL PRODUCTS

What are the Different Types of Products?

Designing, developing, producing and supplying instructional products is flourishing in the United States today, both in the public and private sectors. The types of needs being met, and the populations being served, are so diverse in our pluralistic society, that many types of instructional products are produced.

Textbooks, teacher's manuals, curriculum guides, student workshops and other traditional printed products are only the most obvious types of instructional materials. A wide variety of supporting and supplementary materials related to diagnosis, remediation and evaluation are also available. These include competency catalogs, criterion-referenced tests, basic academic skills tests, comprehensive curriculum and specific course objectives banks, and a vast array of other supplementary resource aids.

These products readily come to mind, but they are far from the only ones. Non-print media have come into great prominence in recent decades, eclipsing in many cases the almost total reign which print media have enjoyed ever since the days of McGuffey's readers.

Even a cursory examination of instructional resource catalogs reveals the following types of non-print instructional materials, made available in various combinations or together with accompanying printed materials:

- ☐ 16 mm or other motion picture materials
- ☐ cassette, record, or other audio materials
- ☐ videotape presentations
- ☐ slide-tape and other multi-media packages
- ☐ interactive-environment work stations
- ☐ computer-assisted instructional software
- ☐ model and simulation hardware

Along with products of the above types, many agencies also provide customized inservice training, consultation and evaluation assistance. While these are not strictly instructional products, they need to be considered increasingly as concomitants of many kinds of instructional products. Examples of these services include:

- ☐ competency-based teacher education materials (NCRVE)
- ☐ customized test development and test scoring (McGraw-Hill)
- ☐ computerized guidance and counseling (Educational Testing Service)
- ☐ cooperative development/publishing arrangements (Litton Industries/IBM)

INSERVICE REQUIREMENTS

Many curriculum materials, of course, require little, if any, inservice training for their proper use. Other products, such as competency-based and computer-assisted instructional packages, as they become available in more content areas, will require greater access to inservice training and expert technical assistance.

HOW TO USE THIS GUIDE

Purpose of This Guide

Vocational education supervisors have a unique opportunity to influence vocational teachers in their use of high quality instructional materials. As a supervisor, you are probably already aware of a vast array of material development agencies, clearinghouses, curriculum coordination centers, etc. All of these are dedicated, in one way or another, to program improvement through providing quality materials.

But there is a problem. The problem is that the vocational education development system is large and constantly changing. It is difficult, even under the best circumstances, to get the information you need when you need it. Here is where this guide can help you.

This guide was designed to help you fulfill your role of linking existing resources for program improvement with actual teacher practice. This guide has two general purposes. First, the guide provides information relating to the special resources available, and the unique challenges faced by vocational education teachers. Second, it helps in four problem areas which are of broad interest to every teacher and administrator; namely:

☐ how to locate instructional products fitting a perceived need;
☐ how to select the best products available;
☐ how to choose among alternative ways those products might be disseminated to constituents;
☐ how to help insure that the products are used most effectively.

Problems Addressed in This Guide

Vocational students' needs for high quality instruction cannot wait. Next semester or next year is too late. When teachers ask for help they want it right away.

Remember, in addition to all your other concerns, as a supervisor you will face the four related problems listed above as you attempt to help people who request assistance. The scope of these problems is quite large. Each one may apply to a host of different types of "products."

A *product*, as used throughout the guide, is any material, device or idea specially designed for program and instructional improvement. Different words—e.g., product, materials, resources and innovations—are used here to mean basically the same thing.

The following are questions you might ask yourself. Each one is addressed in the guide.

LOCATING INSTRUCTIONAL PRODUCTS

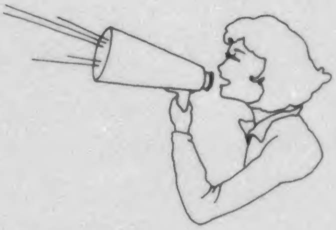
- ☐ What are the various types of instructional products available?
- ☐ Who produces them? Where do they come from?
- ☐ How can I make contact? What is the appropriate source?
- ☐ Who can help me in my search?

SELECTING QUALITY PRODUCTS

- ☐ What makes for quality?
- ☐ What quality assurance does the author/developer offer?
- ☐ What are the advantages/disadvantages of the new products, compared to those the teachers are already using?

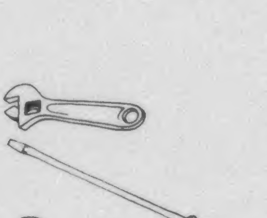
DISSEMINATING INSTRUCTIONAL PRODUCTS

- ☐ How can I improve my dissemination goals?
- ☐ How many different types of dissemination strategies are there?
- ☐ What are some examples of successful strategies?
- ☐ What are the payoffs and the liabilities of each, and when should I choose one over another?



MAINTENANCE OF PRODUCT USE

- ☐ How can I insure that products are not only disseminated but adopted, and used?
- ☐ How can I communicate what I expect in teacher implementation?
- ☐ How can I help teachers overcome reservations about using a product?
- ☐ What are some practical guidelines for implementing and maintaining product usage?



This emphasis is to avoid the rapid obsolescence of information about the large number of rapidly changing private, profit-making organizations and their products. By relying on these sources, you are assured of up to date, comprehensive information.

Finally, there are many professional associations specific to your specialty which are crucially important. These are excellent sources of current information regarding curricula, instructional products, inservice opportunities, conferences, workshops, and information networks directly related to each field. In addition, for all vocational educators there is the American Vocational Association, with its annual meetings, newsletters and other publications (e.g., *VocEd*), and numerous other services. Addresses, phone listings and other organizational information are listed in Part II.

REGIONAL/MULTI-STATE RESOURCES

A variety of laboratories, centers, and consortia serve regional as well as national efforts. **NNCCVTE** Centers include:

☐ East Central Curriculum Coordination Center
☐ Midwest Curriculum Coordination Center
☐ Northeast Curriculum Coordination Center
☐ Northwestern Curriculum Coordination Center
☐ Southeast Curriculum Coordination Center
☐ Western Curriculum Coordination Center

These centers were developed by ED for the purpose of widespread sharing of vocational and technical education products and materials. Each CCC functions autonomously to serve its own region's needs. Through the State Liaison Representatives (SLR's), the curriculum information most needed on the local level is made available to the schools.

MAVCC (Mid-America Vocational Curriculum Consortium) is a nonprofit corporation designed to develop, disseminate and implement high quality curriculum materials in vocational and technical education. There are eleven member states (as of 12/82).

V-TECS (Vocational-Technical Consortium of States) is a nonprofit organization consisting of member states, currently twelve in number (as of 12/82). The Army, Navy, and Air Force also hold associate membership. It was designed to develop and make available task analyses to guide instruction in vocational and technical education.

R & D Labs are the focal point for federal educational R & D . NIE was mandated to support and work closely with a system of regional R & D labs across the country. These labs assist NIE in its two major objectives of:

1) disseminating important R & D outcomes to educational practitioners, and
2) identifying practitioner needs. In addition to receiving basic funding from NIE for these objectives, the labs serve a variety of other regional R & D needs and functions, and have numerous contracts from school districts, industries and private corporations, etc.

Several major regional labs are:

☐ Appalachia Educational Laboratory
☐ Research for Better Schools
☐ Northwest Regional Educational Laboratory
☐ Southwest Educational Development Laboratory
☐ Far West Regional Laboratory for Educational Research and Development
☐ Southwest Regional Laboratory for Educational Research and Development

STATE RESOURCES

RCU's. At the state level are found the various State Research Coordinating Units (RCU's), located in each of the fifty-seven states and territories. RCU's were established under Federal legislation in 1965-66. They are charged with coordinating program improvement, to include curriculum development projects, as well as research and demonstration. While they are administered by the states, the U.S. Department of Education, Office of Vocational and Adult Education has some coordinating responsibility.

RCU's provide a local resource accessible to every vocational instructor in a state. They are, theoretically as well as practically, the point of contact between local needs in instructional practice and the mandated federal programs designed to meet these needs. In every vocational specialty, yours included, there are officers in the RCU with the responsibility of making available resources and responding to area specific requests. Addresses where each RCU Director can be contacted are included in the Resource Listings in this guide.

SLR's. State Liaison Representatives within each state provide a contact with the regional and national networks for curriculum coordination (NNCCVTE), making available many more potential responses to a field-based request for assistance or information. State Liaison Representives are also listed in Part II. They are often found in the state education agency.

SCL's. Also on the state and local level are many state curriculum laboratories and other centers for providing vocational instructional products. SCL's may be a part of the state RCU organization. A comprehensive listing of these organizations, with information on how to contact them, is included in Part II. The following are cited merely to illustrate the variety of organizations that exist, in every region and virtually every state.

SAMPLE STATE CURRICULUM LABS

Name	Region	Location
Maryland Vocational Curriculum Product Project	**Eastern**	**Cresaptown, MD**
Vocational Education Services	**Midwestern**	**Bloomington, IN**
Idaho Curriculum Dissemination Center	**Northwest**	**Moscow, ID**
Vocational Curriculum Development and Research Center	**Southeast**	**Natchitoches, LA**
Vocational Curriculum Material Dissemination	**Southwest**	**Portales, NM**

Many other resources are available at the state and local level. Two potentially important contacts are Sex Equity Coordinators and Career Education Coordinators in the state departments of education. A comprehensive list of these offices is included in Part II.

RESOURCES ARRANGED ACCORDING TO NEEDS

Another way to list organizations is according to what is needed. Consult the following sample list of agencies, organized by specialized needs, to find the type of need you wish addressed, and suggestions of the corresponding sources to investigate. Then consult Part II to find out how to contact each one.

SAMPLE AGENCIES
(Organized by Specialized Needs)

A-V Materials	AAVIM, National Audiovisual Center, NICEM
Basic Skills	Regional Labs, CIOE
Competency Tests	AIR, ETS, NCRVE, NOCTI
Competency-based education	V-TECS
Computer-assisted instruction	Regional Labs
Computer-based materials retrieval	ERIC (RIVE), BRS, NCRVE
Cooperative and experience-based education	State RCU's, State Supervisors
Dissemination practices	NIE, Regional Labs, State RCU's
Handicapped and special needs instruction	State Special Needs Coordinators, State RCU's, Regional Labs
Information search and retrieval	ERIC (RIVE), BRS
Local curriculum information	SLR's, State RCU's, CCC's, State Curriculum Labs
Miscellaneous Instructional materials	AAVIM, State Curriculum Laboratories, MAVCC
National legislation and funding priorities	USDE, NIE
Performance Objectives	V-TECS
Programs of National Significance	USDE, NIE
Sex Fairness	Sex Equity Officer-SED
Task Analyses	V-TECS, MAVCC
Teacher guides, textbooks, etc.	Publishers, AVA Annual Program Guide
Technical and expert assistance	SLR's, State RCU's, Regional Labs

How to Search for Products

Knowing how and where to locate instructional materials is a matter of identifying clearly what types of products are being sought and what is available. It is also a matter of tapping and applying the collective experience others have gained, and being prepared to use new and emerging technology for the rapid computer-based retrieval of materials and other relevant information.

WHAT PROBLEMS DO YOU HAVE?

What sorts of products do you need? A new instructor just beginning to develop a course of instruction should start by developing a clear, and behaviorally specific, set of guidelines and objectives for the course. This involves, in turn, a careful and detailed analysis of the performance required.

Most instructors are already oriented toward analyzing the subject they teach into functionally discrete parts before selecting the strategies and materials will aid their instruction.

Fortunately, vocational teachers do not have to "redesign the wheel," since they may benefit from the resources of hundreds of vocational teachers who have already contributed to the pool of performance objective lists and task analyses. Many such lists are available (from V-TECS, for example). Even experienced teachers seeking to keep their courses current and up to date may wish to take this option.

Closely related is the need for competency measurement. If a teacher is interested in objective measure of student competencies, there are sources to which he or she can turn. In addition to NOCTI, American Institutes for Research (AIR) and the Florida Department of Education are sources for vocational competency tests for approximately fifty different occupations.

Teachers may have other needs as well. Careful analysis of what is needed will often lead immediately to the selection of the correct source. As in any problem-solving activity, the definition of the problem frequently goes a long way towards the solution. You may have to work carefully, and patiently, however, in helping teachers, faculty and staff in the explicit, objective definition of their real problem.

OTHERS CAN HELP YOU

In addition to analyzing the problem, other strategies for locating instructional products are available. One of these is called "networking."

Networking is essentially the strategy of using colleagues and other personal contacts as resource people to aid in locating materials. State supervisors have a good resource available in their staff's and colleagues' collective experience with similar problems. The multiplying effect of beginning with one's own colleagues, and spreading outward from there, can lead to extremely effective results at minimal cost. One is always part of an extensive network of relationships; often surprisingly so. Those who are already expert can become even more effective by tapping their associates.

Networking most often uses informal and professional contacts. It takes advantage of the accessibility of colleagues of others who happen to be closely associated. In using networking, you also get "plugged into" the network for the dissemination of vocational instructional materials.

Good places to start on the local level are with:

1) your State Curriculum Liaison Representative (part of the NNCCVTE network—a current list of centers is found in Part II of this guide);
2) the State Curriculum Laboratory located nearest to you (consult Section IV, "Major Resource Listings," under the

alphabetical listings organized by state); and
3) your RCU.

Other places to start are the development organizations most appropriate for your particular need. (Refer to the previous section, "Where Do They Come From," if necessary. Or, look directly in Part II. There you will find a current address and telephone listing.

AFTER YOU TRY PEOPLE—TRY COMPUTERS

Assume you want to find out about the status of research and development on a given topic, such as vocational education for the handicapped, and you want as broad a picture as possible. The place to look first is in ERIC, which is the major repository for research and development documents in education. Hand searches of ERIC may be carried out. But increasingly on-line computer searches are the way to go. Be sure to consult the *Thesaurus of ERIC Descriptors*, in your local college library or cooperating ERIC center, to help define your search.

RIVE. Resources in Vocational Education (RIVE—formerly AIM/ARM) is the special database which is devoted to vocational and technical education. A wide range of topics is covered, drawing upon sources such as instructional materials from local school districts, state departments of education, curriculum development laboratories, etc. This database also uses the ERIC *Thesaurus*. Questions regarding RIVE may be directed to the National Center (NCRVE).

In addition to a more conventional "literature" search, an ERIC investigation might include a computer assisted inspection of articles as well as a systematic investigation of catalogs from curriculum resource centers such as NNCCVTE, MAVCC or GPO.

SPIN/SPIF. The School Practices Information Network and File (SPIN/SPIF) is a computerized data system which was begun under contract with NIE to supplement ERIC and RIVE with current program practice and educational material information. Operated privately by Bibliographic Retrieval Services (BRS), the on-line system is available on a pay-as-you-go basis. Extensive file data on school practices in vocational education are available.

Finally, consult the following publication for information on databases in many vocational areas. It is available through ERIC and the National Center for Research in Vocational Education:
Databases and Clearinghouses: Information Resources for Education.

How to Select Products

Careful evaluation is the key to searching among the ever increasing array of instructional products. Those who evaluate instructional products need guidelines to aid in the selection process. Supervisors may use these tips to help others in the process.

The guidelines which follow represent the consensus of many who develop, as well as use, instructional products. Their distilled wisdom comes out of lifetimes of experience in the evaluation, selection and, ultimately, the use of products.

EVALUATION CRITERIA

Relevance. What is the relevance of the product to the objectives of the course of study? To what degree does the product clearly and directly relate to the course objectives?

Organization. Is the material well organized? A clear organization should be one of the most obvious features of high quality instructional products. This allows users easy access to what the product has to offer. The format and organization must be consistent. logical, sensible and obvious. If there are several products in a series, how does each relate to the others? Their relationship should be clear and obvious.

Content Clarity. Is the material clearly presented? Is the exposition easily understood? Are explanations and directions full and unambiguous?

Comprehensiveness. How comprehensively does the product address your objectives in comparison with other available options? Is the product appropriately comprehensive, or does it make only a slight contribution to your objectives?

Accuracy. Are the materials accurate? Is the information contained in the materials reliable and up to date? Several sources of evidence should be checked. The reputability and credibility of the source—publishers and developers alike—are all relevant pieces of evidence which are relatively easy to obtain. How recently and how frequently has the content been updated, field-tested and verified? Evidence of expert reviewers or advisory boards is also of considerable help in building your confidence in the material.

Appropriateness. Are the materials appropriate for the intended audience? Your analysis of appropriateness must take into account both the short- and long-term goals of instruction, the needs of students, their interests and reading abilities, the possibilities for self-pacing and remediation, and the like. Technical vocabulary should be introduced only as needed and required, and then carefully identified and defined. Jargon should be scrupulously avoided.

Usability. How usable are the materials by teachers and other implementors? This criterion specifically focuses on the school or other instructional setting. Are the materials adaptable within the intended contexts? Are the resources needed to use them already present, or readily accessible? Are the materials easily integrated with local teaching and testing practices? Is there evidence that the materials have been tested for their usability in the various settings for which they claim appropriateness? The credibility of such claims may be tested by asking: Which individuals (school districts, etc.) have adopted the materials? How long have they been using them? With what results?

Effectiveness. How effective are the materials? Do they have the potential to bring about the desired changes in their intended settings? What is required for successful use of the materials? How do teachers perceive the materials' effectiveness?

Cost. How much will the product cost? What training is required for successful use of the materials? How long will the materials last? How durable are they? What is their maintenance cost? Are the anticipated costs of using and continuing to use the products reasonable for the benefits anticipated?

Generalizability. Finally, how generalizable are the materials? Are the materials capable of being used in sites, or with audiences, other than those primarily intended? An important feature here is the sex fairness, and culture fairness, of the materials. These features will influence the potential user's judgment regarding the use of scarce funds for acquiring the materials. The competition for scarce resources may rule out acquiring products which can be used in only a few settings or with only a few groups.

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SELECTION TIPS

In addition to the general criteria above, teachers often need special advice for selecting specific types of products which they use most frequently such as: textbooks, teacher's manuals and visual media including film and video.

Often the most effective method of delivering specifically tailored advice is to give examples of particular products in the teacher's field and point out their strengths and weaknesses. This amounts to a practice session on how to apply the guidelines discussed above. In addition, there are certain points to watch out for when selecting textbooks, teacher's guides/manuals or visual media. These are briefly discussed below.

It is always a good idea to remember that teacher aids such as these are seldom selected in isolation from one another. Textbooks and teacher's guides (as well as student workbooks) quite often come in companion sets. They are also frequently coordinated with various available visual media. Thus, it is important to consider the total package available and how it measures up against other options.

Textbook Selection. When evaluating and selecting textbooks, in addition to considering the general criteria above, you should also consider several other desirable qualities. The following is a checklist of questions the teacher might do well to consider:

☐ Does the text represent a broad spectrum of viewpoints on a given topic?
☐ Does it contain bibliographies reflecting multi-media materials?
☐ Is it appropriate to various styles of learning?
☐ Does it reflect the pluralistic character and culture of the American people?

Feel free to add your own questions to this list.

Selecting Teacher's Guides. Since a teacher's guide or manual most frequently accompanies a textbook, the decision to use a particular guide cannot be separated, in most cases, from the decision to use the text. A useful guide should make the textbook more effective and usable. It should clarify, in the teacher's mind, how to get the maximum gains in student learning from the text plus various supplements and other learning devices. It should provide practical suggestions, for example, for appropriate student projects, discussion topics, and visual media coordinated with each unit. Another highly desirable feature is the inclusion of test items, or other evaluation instruments, to measure what students learn. If these are present, they should measure the stated objectives of the materials.

Other questions to be considered are the following:

☐ Does the guide indicate what, if any, support system is needed for effective use of the text or other product?
☐ Does the guide review what qualifications of teachers are required for them to use the product effectively?
☐ Does it clarify what the student must know or be able to do prior to the product's use?
☐ Does it suggest any steps for remediation or repetition of learning cycles, if necessary?
☐ Does it make allowances for different learning styles and self-pacing, including acceleration?

Selecting Visual Media. Although the general criteria discussed above apply to visual media as much as to other instructional products, it is worth stressing careful evaluation on these criteria.

The evaluator needs to be especially analytical to avoid using visual media **only** because of their entertainment value. The following questions should be considered:

☐ Do the proposed visual media make a unique contribution to the objectives?
☐ Do they have strengths not possessed by other techniques?
☐ Do they supplement the effectiveness of instruction?
☐ Do the techniques used improve upon materials or techniques already in use?
☐ Do they present information, talent or teaching methods that are not available in a conventional classroom?

Visual media do have a unique potential for contributing to intended student outcomes. They can increase effectiveness of instruction, both qualitatively and quantitatively. They can make available experts on specific topics. They can multiply instructional impact beyond the limits imposed by the traditional classroom exposure.

Another potential that visual media have is for demonstrating complex performances, where a life-like sequence of steps can be modeled and observed. These demonstrations must of course be supplemented with the opportunity for practice and feedback.

The evaluator, then, should consider whether the real potential of visual media are being tapped.

In addition, several other questions need to be asked concerning visual media.

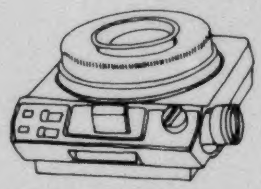
☐ Are the materials of acceptable technical (visual or audio) quality?
☐ Is there anything about the content or style of presentation that suggests the material is out-of-date?
☐ Do the materials encourage and allow the possibility of viewer involvement, if desired?
☐ Are the materials accompanied with high quality teacher guides which enhance their effectiveness?

SAMPLE REFERENCES

Komoski, P.K. What Curriculum Leaders Need to Know About Selecting Instructional Materials. ERIC Document No. 184 146, 1980.

Kramhout, O.M. and Massey, R.M. Guidelines for the Evaluation and Selection of Instructional Materials. ERIC Document No. 206 771, 1981.

Wilke, J.L. Guidelines for Evaluating Instructional Media (Film and TV). ERIC Document No. 202 771, 1981.



HOW TO DISSEMINATE INSTRUCTIONAL PRODUCTS

Why Disseminate?

Educators must work within tight budgets. But economic constraints do not necessarily mean doing without high quality instructional products. **MORE** is not always **BETTER**. In vocational program improvement resource sharing is beginning to replace local development. We can no longer afford to develop all our own products. Better results can often be obtained by sharing high quality, tested instructional products and materials.

"DISSEMINATION" HAS MANY MEANINGS

Dissemination has a variety of meanings. They range from merely distributing information on a given instructional product or practice, to influencing teachers or school districts to adopt and use a product on a trial basis, to long term continual commitment to new practices.

There is a progression of user involvement, and commitment, to products. Yet all of this involvement comes under the umbrella of dissemination.

The type or complexity of the product being disseminated may materially influence the approach one takes to disseminators. Nevertheless, the objective is always program improvement through improved instruction and/or lowered cost.

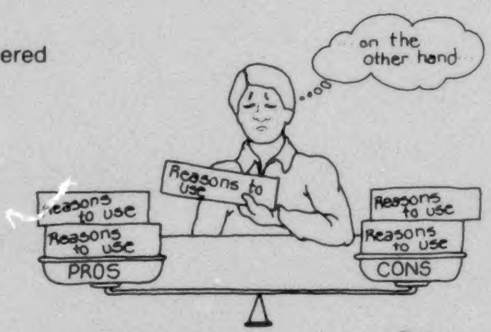
INFORMATION? OR PROCEDURES? OR PRACTICES?

You may have many purposes for disseminating information about new products, or distributing the actual products themselves. Your reasons range from a simple desire to keep local administrators aware of new materials to promoting a new practice mandated by your state legislature. But whatever your motive, and whatever product is disseminated, product and cost effectiveness should be your priority.

Even if your purpose is the distribution of information about a product, your concern should be that teachers have information readily available, at low cost, when they need it.

This concern translates into careful attention to effective, attractive and scannable communication. No one wants to waste money on efforts that will be ignored or thrown away.

If you wish to disseminate a product, there is more involved than simply making information about these products available. There needs to be careful attention to such factors as: how do the characteristics of the product affect the potential user's interest, what is the perceived utility of the product, how adoptable does it appear to be for different individuals and groups, and the like.



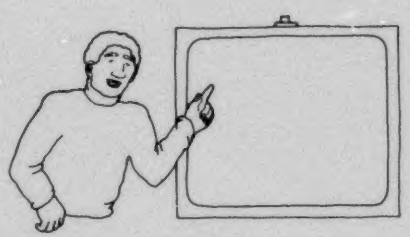
LASTING COMMITMENT: THE GOAL

If your goal is the implementation and continued utilization of new products, the following are questions to consider: which dissemination techniques are most effective to achieve the desired type of implementation; how much "human" resource is needed; etc.

Many materials require little, if any, additional support. Others require a great deal of expert help to implement them correctly. Knowing when expert assistance is needed and where it can be found is thus a key element in the arsenal of any vocational education supervisor.

Some General Guidelines

To disseminate any educational innovation takes more than simply making people aware of good ideas. This is the "build a better mousetrap" fallacy. If one builds a better mousetrap—or teaching innovation—contrary to the old saying, the world will *not* necessarily beat a path to one's door.



Your efforts **must** be accompanied by careful attention to the dissemination process.

GENERAL RULES

The following general rules have been found to be of assistance in helping disseminate ideas and products.

Perceived Utility. The innovation must be not only of good quality, but must be **perceived** as useful. There are several characteristics of products and other innovations which are generally perceived as useful. They are:

- ☐ Compatibility with an organization's goals and traditions;
- ☐ Clearcut advantages over other alternative products and methods;
- ☐ Moderate expense in money, time and effort.

Adoptability. Products must also be adoptable. The following characteristics of an innovation enhance the chances for its adoption:

- ☐ Readily observable;
- ☐ Flexible enough to be adjusted to local conditions;
- ☐ Simple enough to be easily understood;
- ☐ Accompanied by self-explanatory supporting materials;
- ☐ Congruent with the user's perceived needs;
- ☐ Advocated by credible individuals or organizations.

Compatibility with Local Conditions. Additionally, careful attention must be given to the social context in which the innovation is to be used. This is particularly true when lasting changes are desired. There should be:

- ☐ Adequate planning, with the cooperation of the target audience;
- ☐ Adequate local financial resources;
- ☐ Adequate local human resources;
- ☐ In-service training for practical applications;
- ☐ Open two-way communications.
- ☐ Administrative support.

Choosing a dissemination strategy should depend on a careful analysis of the problem and application of the above suggestions. It is important to examine carefully how others have been successful, and what strategies they have used.

CRITERIA FOR SELECTING A STRATEGY

Dissemination strategies are more than a hodge-podge of activities. **More** dissemination activity is not always **better** activity. Judicious selection of dissemination activities depends on many factors, two of which are:

1) the funds allocated for your activities, and
2) the past experience of you and your target audience with similar dissemination efforts.

COST-EFFECTIVENESS

Generally speaking, the closer your activities move toward implementation, the costlier your activities will be. This is because there is a progressive demand for face-to-face interaction, staff development, site visits, etc. Given limited resources, costs might seem excessive. What can you do?

First, avoid backing up to a lower level of dissemination simply to cut costs. Activities which are best suited for creating awareness (newsletters, brochures, etc.) are no substitute for those which foster understanding. Activities that foster simple understanding are not sufficient for good decision making; and so forth.

If your analysis indicates that the time is ripe for implementation efforts, money spent for creating only awareness would be simply wasted. (The reverse is also true: without first laying the groundwork of awareness and understanding, funds invested in activities demanding face-to-face interaction will also be badly spent.)

Second, make use of multiple stages of interaction. For example, arrange to interact with a few opinion leaders in a school district, before attempting to work with all teachers.

Similarly, make use of already existing communication networks to multiply your efforts. By getting individuals who are already a part of a communication network involved, your influence can be extended at little additional cost.

Third, work for the collaboration of all the relevant groups of people who are to be involved. This includes not only members of the target audience, but other persons or organizations who have a stake in the outcome and can influence the dissemination process. Cooperation and the sharing of needed resources, ideas, etc., is essential to getting the job done.

PAST HISTORY

Another factor you should consider in selecting a dissemination strategy is the past experience you and the target audience have had with similar materials and related practices. If teachers have had negative experiences with previous implementation efforts they will tend to be cynical about new ones that come along. If you have worked successfully with them in earlier efforts, they will be more willing to try out new ideas later. Sometimes, if you have a very difficult or ambitious project in mind, it is wise to start out with something simple, that is relatively sure of giving them a sense of success before attempting more complicated efforts.

Another ploy is to send up a trial balloon with a few experienced contacts first. Get their reactions before committing a large amount of money and time. This precaution can be worth a lot in the long run.

Another way to avoid premature negative teacher reaction is by developing a cadre of experienced advocates of the materials/practices you are trying to disseminate before you try for wider adoption. Teachers are most likely to be influenced by respected colleagues who already use the materials.

Finally, any communications regarding the product should indicate the relative advantages of adopting the new materials/practices very clearly. If you truly believe your products have clearcut advantages and deserve a fair trial, potential adopters should have these reasons set forth early and convincingly.

Dissemination Strategies

Dissemination strategies vary along a continuum from the impersonal to the highly personal. These strategies may be categorized, however, according to the purpose you hope to accomplish. These include:

☐ disseminating information
☐ distributing products
☐ initiating implementation
☐ institutionalizing (maintaining) the change

DISSEMINATION HAS 4 LEVELS

The National Institute of Education defines *dissemination* as a series of activities which help those who comprise a target audience to:

1) become **aware** of the intended outcome (product utilization and its benefits);
2) **understand** how the materials can be used;
3) **decide** whether or not to use the materials; and
4) **implement** or continue to use the materials.

This definition of dissemination, applied to educational products and their use, shows a progression of activities from awareness to implementation. Effective dissemination activities must go through these progressive steps to reach, sooner or later, ongoing use of educational products for program improvement.

It is assumed, of course, that the general rules outlined in the preceding pages are followed. That is: the products have both *perceived utility* (they are quality products) and *adoptability* (they are practical and serviceable from the user's point of view); and there is a good fit between the products and the setting for adoption, as determined by careful *analysis of audience* and *context*.

Selecting a dissemination strategy starts first with the selection of which level of assistance (awareness, understanding, decision or implementation) is desired.

All four levels of dissemination activities will be relevant at one time or another.

Ultimately, of course, the goal of implementation, use, presupposes all of the preceding steps (awareness, understanding and decision). You may find yourself working at any one of these levels.

SAMPLE DISSEMINATION ACTIVITIES

The following discussion gives concrete examples of each level of dissemination adapted from a publication of the Illinois State Board of Education. This will serve to clarify the meaning of each level. It will also serve to remind you of the various alternative techniques you might wish to employ depending on the purpose of the activity.

AWARENESS

Awareness can be fostered in many ways. A few of the more commonly used examples are brochures, press releases, newsletters and advertisements.

Here the intent is to "get the word out." At the very least, target audiences will learn that a product, or line of products, is available. In addition, they can ascertain why you regard the product as of high quality. Finally, your audience should learn the basic facts regarding how to find out more about the product in question.

Different techniques reach different audiences. Articles in professional journals provide a good method of making researchers and administrators aware of the materials. Articles may escape the notice of many, however, and there may be a publication lag of six months or even more.

ERIC provides an outlet for unpublished or "fugitive" documents. The widespread accessibility of the ERIC system is one advantage of this technique. Information about high quality products, though, can be lost among all of the information filed in ERIC. It takes a certain amount of persistence to locate materials with this technique.

NNCCVTE, and the regional CCC's, is set up to increase awareness of new products with good promise for meeting needs. SLR's are the point of contact within each state.

Occasionally, T.V. and radio announcements might be appropriate. This is more likely to be fruitful if the announcements are aired during the times when members of the target audience are most likely to be tuned in, and on stations your audience typically listens to.

UNDERSTANDING

Understanding is fostered when people are given first-hand experience with what the product is like. There are many ways to accomplish this. Materials can be made available for review by loaning them through various library systems. Materials may also be purchased directly from publishers, or made available to potential customers as examination or complimentary copies. Some disseminators are set up to provide materials on a cost recovery basis. Some even supply limited quantities free. Conferences provide an excellent setting for giving demonstrations of materials and their uses.

One of the most effective sources of promoting understanding is one's colleagues. You can make use of informal networks of the people you really want to reach. User "testimonials" in printed materials, or live user panel discussions at conferences or conventions are methods of getting the attention of other potential users. Many centers (SCL's, CCC's) maintain files of product evaluations.

DECISION

Decisionmaking does not happen all at once. When you help someone decide whether to use a product you are doing at least two distinctly different things. First, you are "making the case" for using the product: giving reasons, lining up facts, comparing the product with alternatives already in use, etc. Decisionmaking depends on more than just reasons. It is a matter of the "heart", as well as the "head". So the second type of thing you do is remove obstacles to action. This involves overcoming inertia, often by guiding a prospective user step-by-step toward a better appreciation of what using the product actually would be like.

This phase requires face-to-face interaction. The analogy of "selling" the product, as in direct sales, comes readily to mind. Personal profit does not enter the picture, but like a salesman, you may find yourself pressing for a decision to use what you consider to be a superior product. There is nothing wrong with that. That's good leadership.

Some techniques which meet only the informational requirements for a decision are: a comparative catalog of alternatives, and information on various resources which meet the same need. Other techniques which go beyond information are: on-site demonstrations, field testing and workshops. The personal face-to-face character of these techniques makes them well-suited for fostering decisionmaking.

IMPLEMENTATION

Implementation focuses on encouraging users in continued product use. Once users have made an initial commitment to use the product, they need the continued support to increase their commitment and involvement. You do this whenever you give the teacher a sense that what he or she is doing is important. Teachers, like everyone, want to do a good job. But they often require special training, and ongoing support to use new products effectively.

Some examples of implementation techniques are: giving special recognition or rewards (certificates, status changes, salary increments); providing on-site technical assistance; establishing training programs for new participants; giving implementation workshops; setting up a telephone hot-line to deal with problems as they arise; instituting a "troubleshooter" specialist to cope with specific difficulties; etc.

There is no substitute for careful planning, though. All the progress you have made might be lost if teachers experience excessive delays in the delivery of needed materials or other resources. They must have physical as well as psychological support.

In addition, the problems of *maintenance* arise when you attempt to institutionalize product use; to make it part of a teacher's standard repertoire.

Information Dissemination

Dissemination of information may be accomplished in a variety of ways. This section gives a broad overview of the kinds of options which are available and their uses. Then three of the most useful forms of printed information dissemination—newsletters, brochures, and press releases—are discussed in greater detail.

In evaluating the various alternatives, of course, both objectives and cost have to be carefully weighed. The circulation of printed material is the most frequently used technique of information dissemination because it is cheap and efficient. Newsletters, brochures, bulletins and press releases are especially economical when compared to techniques in which a high degree of person-to-person involvement is required, e.g., inservice training or expert assistance.

Cost-effectiveness is a different matter. Abundant research confirms that merely circulating information in a printed form, even in thousands of copies, is an ineffective device for achieving product implementation.

One problem is that it is almost impossible to explain a complex instructional procedure in a newsletter or brochure. Thus, complex products may require a different strategy which will increase the chance for acceptance and effective use of the target material.

SURVEY OF THE OPTIONS AVAILABLE

Among the many ways to disseminate information, the following (listed alphabetically, not necessarily in order of importance) should be considered:

ERIC. ERIC was instituted to provide documentation for, and widespread accessibility to, the many unpublished or "fugitive" documents that exist. The large number of cooperating centers, including government agencies, universities, libraries, etc., insure that practically everyone who wishes to use the system can. On-line retrieval capability makes ERIC more usable for more people now than in the past.

A drawback of this method is that the thousands of submissions to ERIC annually make it difficult for quality products to be noticed.

High Technology. Many breakthroughs in information dissemination are now occurring due to rapid technological advances. For example, "electronic mail," a method of sending messages through a computer, is spreading rapidly. The telecommunications field is producing many more innovations with revolutionary implications for information exchange. These developments are extremely volatile; they will affect us all.

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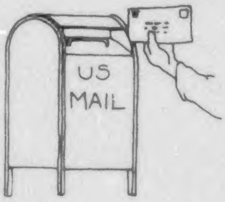
Resource Libraries. A curriculum or instructional resource "library" can have good results. If funds are available, a central repository can be established where instructors can come to inspect, browse and compare. While travel can be a problem, the advantages of multiple comparisons can be substantial. If a "librarian" or expert is available for consultation, there is one more reason to make the effort and use the library.

Journal Publication. Articles in professional journals can make researchers, administrators, and some others, aware of the materials. But, as stated before, there are some drawbacks. The readership of the journals may include few of those whom you would like to inform. This form of dissemination is also slow, with the publication lag longer than you might wish. Finally, the style requirements may preclude making the message as effective, as well as informative, as you want it to be.

Mass Mailings. Mailing large numbers of brochures, newsletters or other printed materials is an effective way of "getting the word out" rapidly and cheaply. In addition to printed material, A.V. Kits, called PIP's (product information packets) are now routinely sent out using other media in addition to print.

The danger, of course, is that much of this material will be placed in the "junk mail" category by the recipient. The cautions on cost-effectiveness are particularly important. For this reason, special attention must be paid to presenting the message in a clear, concise and appealing manner. Careful consideration of the characteristics of the audience, and mailings targeted to their needs, is also important.

Product Catalogs. The circulation of product catalogs provides a definite assist to users in making comparisons among alternatives. By making these available to your clientele you will appeal to their "smart shopper" instincts.



Product Fairs. Another option is the "product fair" concept. This can be organized to present only those materials which are most directly related to specialized needs. Vocational instructors can be invited selectively—i.e., those who are most likely to have these needs. Or, exhibits such as those set up by publishers or vendors can be set up at conferences and conventions. In this way the potential user and the appropriate materials will come together in favorable combinations and circumstances. The presence of others with the same or similar needs can also create a dynamic situation. Users will interact with one another, compare notes, share ideas. The time is then ripe for public demonstrations to generate enthusiasm and engender confidence in the products to be shared.

Speaker Bureaus. Professional associations or other institutions frequently develop a pool of resource people who can be tapped for speaking engagements for various meetings of their members. This can provide an excellent opportunity for informative descriptions, or demonstrations, of instructional resource options.

Teacher Exchanges. Another method of sharing product information is through teacher exchanges. These are collaborative networks of teachers, usually from more than one district within a state or region, who meet to draw upon one another's ideas and contributions. This provides a particularly suitable opportunity for introducing new concepts, ideas and techniques.

Workshops. While workshops are often the best vehicle for training and preparing instructors for implementing products, they are also excellent opportunities to make them aware of new alternatives. Any time potential product users are assembled and ready to "talk shop" is a good opportunity for information dissemination.

THREE TECHNIQUES: NEWSLETTER, BROCHURE AND PRESS RELEASE

Three of the most useful forms of printed information dissemination are newsletters, brochures and press releases. You will find sufficient detail here to help others know what to consider in using them.

NEWSLETTERS

Newsletters are often used to give members of an organization the feeling of being united around their goals. They keep members up to date on current events and topics of special interest. They also publicize the organization, its purposes, activities, and current projects.

The task of preparing a newsletter can be aided by paying attention to the following guidelines for content, design and distribution.

Content. Members of the organization may be encouraged to contribute articles on different topics such as instructional products they are using and their advantages over other alternatives. By making such exchanges of ideas a regular feature of the newsletter, you should succeed in alerting more teachers to watch for the product information being shared.

Your newsletter's primary job is to inform and educate. However, communication need not be just one way. Reader feedback can be used to evaluate the effectiveness of a product or find out how most users respond to it. By publishing the results of the poll, two-way communication is fostered.

Design. The layout and design of your newsletter is important. It should be attractive in appearance. An eye-catching masthead with the name, date, and a logo is advisable. Graphics and artwork, however simple, throughout the newsletter, are also desirable. Large, easy-to-read type will enhance reader appeal. Articles should include frequent subheads and a generous amount of white space.

Careful layout will determine the size and number of pages, column width, and the use of graphics. When laying out your newsletter, be sure to reserve a place for the name, address and phone number of your organization as well as a special section to identify the editor and contributors.

An economical way to produce an attractive newsletter, with a minimum of artwork, is to have the masthead printed on enough paper to produce a year's supply of newsletters. An office copier or duplicator can print the manuscript copy on plain paper to yield an attractive publication.

If four pages are needed, printing on a sheet 17" wide by 11" high may be the most economical. This will make the newsletter standard 8½" by 11" size when folded.

For mailing the newsletter, you may wish to fold it into thirds to permit either mailing in a standard-size envelope or stapling it closed as a self-mailer and sending it bulk rate.

Distribution. A newsletter that can be folded and mailed without an envelope will be easier to handle and cheaper to send. Print the organization's return address on an outside flap and use mailing labels to record the names and addresses of recipients. Group them by zip code for easier sorting and bundling at the post office.

Maintain an up-to-date mailing list. An annual questionnaire is a good device for obtaining name and address corrections as well as comments and criticisms.

Publicize the fact that you have a newsletter. Invite requests for additional free copies, and place information about the newsletter in other printed materials. This is an excellent way to inform others of the work of the organization and to encourage involvement and participation.

SAMPLE REFERENCES

Fales, J.F. Putting out a great newsletter. *VocEd*, Nov./Dec., 1982.

Wales, L.H. *A Practical Guide to Newsletter Editing & Design.* Ames, IA: The Iowa State University Press, 1976.

HOW TO PRODUCE A BROCHURE

Brochures are an excellent method of getting out information regarding promising instructional materials. To prevent worthy products from being lost in the shuffle, follow these simple guidelines:

1) Print the flier on high quality durable stock.
2) Convey the essential message as clearly and concisely as possible.
3) Use both sides of the paper, but do not make the copy too crowded. Leave a generous amount of white space.
4) Spend an adequate amount of time and effort on the design and layout. The final product should make an immediate artistically pleasing impression.
5) The content should include all the information a recipient will need to make appropriate contact for further information, or to acquire the referenced material.

Who? What? Why? When? How? Where?

HOW TO PREPARE A PRESS RELEASE

Appropriate uses for a press release are: announcing an upcoming event, issuing a statement, taking a stand on a news development or issue, providing background information or supplementing late-breaking news.

The newsworthiness of your subject should be carefully weighed. Of course this depends on the target audience. The first question is, Whom will it interest? Other questions to determine newsworthiness are: Will it offer new information? Will it affect a large number of people in a significant way? Then, once you have determined that it is newsworthy, you must decide which communication channel will reach the people whom you wish to reach.

Again, you will be most effective if you pay attention to a few guidelines regarding content, format and style.

Content. The traditional "five W's"—"who, what, where, when and why" (and if possible, a sixth, "how")—should guide the writing of the first paragraph. It is important that the essential information in your release be in the "lead," or very first part, of your story. Here is where you need to capture the attention of the readers and make them want to know more.

Later paragraphs of your release may be devoted to additional facts and details, in order of decreasing significance. Journalists call this writing technique the "inverted pyramid." The story is written so that the editor may end it at any paragraph without losing essential information. In this way stories can be used to fit available newspaper space, or available air time if it is used in a broadcast.

Format. There are some basic format guidelines, or conventions, that are generally accepted and followed by both print and broadcast media. Of course, local requirements may deviate from these and you should find this out from local press contacts.

All releases should be typed on standard-size white typing paper. Double- or triple-space the release on one side of the paper only. This provides space for editorial changes and makes typesetting easier. For the same reasons ample margins are preferred.

The name, address and phone number of the organization should appear in the upper left-hand corner of the first page. The address and phone number of the person to be contacted for further information should appear there also.

If letterhead is used, be sure to add contact information.

Release date instructions should appear at the upper right-hand corner of the page. *FOR IMMEDIATE RELEASE* or *FOR RELEASE UPON RECEIPT* means the editor or broadcaster can use the release at once. If the story relates to a future event or activity, you should type (for example) *FOR RELEASE WEDNESDAY, JUNE 16*. If it is particularly crucial that information not reach the public until after a certain time, this should be in the release instructions, such as: *HOLD FOR RELEASE AFTER 5:00 P.M., WEDNESDAY, JUNE 16*. The year does not appear in the release date instructions, but it should be indicated, for future reference, at the left-hand bottom of the last page.

The headline appears about one-third of the way down the first page, centered and capitalized. This will serve as a label or brief description of the story. It will not necessarily be the headline the editor uses in the printed copy.

If the release exceeds one page, write MORE at the bottom of the page. At the top of the second and subsequent pages, identify the release with a "slug"—some key words condensed from the headline—and the page number in the upper right-hand corner. A few cross-hatches, or number symbols found above the 3 on the standard typewriter (# # #), should appear underneath the final paragraph to signal the end of the release.

Style. Many newspapers provide a style sheet for people wishing to submit material for publication. If one is available, you will find it useful, especially in regard to capitalization, abbreviation, punctuation and use of titles. Brevity is particularly important. Avoid unnecessary words. The whole release should be easy to read and take a minimum of space. If you wish assistance *Elements of Style* by Strunk & White is a classic source.

Most releases can be written in one or two pages. This will fill about 12 inches of newspaper column space. Do not exceed two pages. That is more than most editors will allow the average story.

Distribution. How you duplicate your news release for distribution will depend upon the number and location of the media you are sending it to. If it is a single newspaper or broadcast station, send an original typewritten release. If more channels are involved, have it duplicated or copied clearly. Never use carbons; they smear when editors work with them.

When an editor receives a duplicated story, he knows others are also getting it. When it is an original typewritten copy, he may think it is an exclusive. It is important that he have this information to allow him to rewrite it for individuality or to play up an angle. When individually typed identical stories are sent to more than one outlet, be sure to list at the top of the release those newspapers and stations to which they are being sent. Be sure to keep at least one copy of each release sent out for your records.

Your story should arrive in the hands of the media at least a day before the release date; earlier if you think some follow-up or expansion may be desired. Sunday stories require at least a week's lead time.

Product Distribution

There are several different methods which may be followed in product distribution. Like the various kinds of information dissemination, each has its own advantages and disadvantages.

If products are going to be effectively distributed to those who need them most, appropriate information must accompany the products. Moreover, if the product is complex (i.e. its use requires new skills, comprehension or attitudes) you should select your method accordingly. In some cases, the product should be accompanied or closely followed by appropriate training.

From the various options available, select those that are most practical and cost-effective. If you already have well-developed product distribution procedures and they have been working well for you, continue to use them.

DIFFERENT METHODS FOR DIFFERENT CIRCUMSTANCES

The following will highlight strengths and weaknesses of different methods. You may wish to diversify, expand or supplement your existing system to care for special circumstances that may arise. In addition, you might use this list of options to create awareness in new staff concerning the various alternatives which are available to them.

Non-profit, Cost-recovery. One method is a non-profit, cost-recovery operation, such as those provided by NNCCVTE, NCRVE, and the regional labs. A catalog of current materials is sent to prospective users. Anyone may purchase materials. The cost to the user is, presumably, minimal; being the cost of producing and distributing materials, plus miscellaneous operating costs. Service, rather than profit, is the motive. No salesmen are involved. But little advertising is involved. Products often fade quickly from sight.

Three advantages of this method are:

1) low cost
2) reasonable quality control and quality assurance; and
3) services can be rendered over a wide geographical area.

This type of service is generally provided by the various R & D labs, and networks around the country. Contact with NNCCVTE, or any one of the regional centers, may be made through your local SLR. Your state RCU is also an excellent source for learning how to get specific questions answered regarding these facilities.

University-based, Cost-recovery. Universities often operate as a central point for the distribution of selected instructional materials. The materials are assembled from a variety of sources. Frequently, the operation services one particular branch of vocational education, and are affiliated with a vocational teacher trainiing department. Some make materials available outside their own state; some do not. Generally, the same advantages and disadvantages of non-university-based, cost-recovery facilities apply here.

Multi-state Consortia. V-TECS and MAVCC are two outstanding examples of multi-state consortia for the dissemination of vocational education instructional materials. Member states are entitled to receive materials contributed by all other states, which include competency-based instructional materials, such as lists of competencies, task analyses, and the like. Both organizations also sell their materials outside their member states.

The major advantages are wide geographic distribution, and coverage of virtually every major area of vocational education. In addition, definite standards for acceptance of materials are employed. All products are validated against current practices in business and industry.

Commercial Publishers. Through the use of commercial publishers, one gains a widespread potential audience with all the advantages of sophisticated promotion and marketing. On the other hand, from a user's viewpoint these promotional techniques can make the job of evaluating the products' usefulness more complicated. Consumers of products from commercial publishers should take precautions to insure the products are tested.

The major advantages of commercial publishers is that they do promote their products. This is an important factor if you need to foster awareness. They often provide highly specialized inservice. And their materials will continue to be available for some time.

One problem can arise in the re-use of previously published materials. This is conflict over copyright restrictions. It is wise to explore ways teachers can use and re-use materials without these worries, e.g., by granting a special license to local people to reprint materials.

State Curriculum Labs. Another means of distributing products is through state curriculum laboratories. In virtually every state, centers are found situated either with state education department facilities or in other settings such as universities and colleges (described above). State curriculum laboratories are frequently part of larger, multi-state consortium arrangements such as MAVCC and V-TECS. They may be involved in product development and support services, or they may be limited to distribution of products on a cost-recovery basis.

Other Options. Additionally, a number of other product distribution strategies are in current use around the country. The following strategies, for example, have been used by various state education departments:

☐ allocate funds for producing materials in quantity and making them available gratis as long as supplies last;
☐ award funds to local school districts or coordinators to purchase materials as they have need;
☐ extend contracts to an external agency to run the dissemination service;
☐ assemble highly credible teams of product reviewers to evaluate products and recommend which ones should be placed in a field test mode.

To date, one major attempt to analyze state level differences in dissemination policies and strategies has been published (Paisley and Butler, 1983).

CHOOSING THE RIGHT METHODS

While all of these methods, and many more, have been tried, your strategy should depend, of course, on your plan for program improvement. Product distribution should be just one component. For example, if instructors are consulted to identify priority areas and assist in product development, whatever product distribution strategies are chosen should probably reflect instructors' input as well. Simply choosing from a menu of possibilities without regard for these circumstances would be inadvisable.

However, within these necessary constraints, it is a good idea to examine what is being tried elsewhere. How effective are the various approaches? How similar are the background circumstances to your own? Are they well-suited for your vocational area? Do you have the resources to implement them? Again, what you already have in place need not be swept aside or changed radically. But you are probably well-advised to rethink your options occasionally in the light of your existing plan and resources.

Implementation

If you are simply distributing information where little implementation is expected, then the "human element" may be minimized. The more action you expect by a local administrator or instructor, however, the greater the degree of human involvement required to produce it. Here are some practical suggestions for increasing the likelihood of actual adoption and use.

First, you need to be clear about the amount and type of change desired. How much change are you willing to call "implementation".

REPORTED USE IS NOT ACTUAL USE

It is not enough for users to say yes when asked, "Have you implemented X?" There is often a difference between what people say and what they do. Your job is to be clear about what the innovation is and what you expect in implementing it.

OVERCOMING INERTIA

Once the desired innovation is described accurately, there are many practical steps to take. There is a certain inertia to be overcome. Teachers and administrators have seen many innovations come and go. Your task is to show how your idea is better than all the other ideas they have been asked to adopt in the past.

Put yourself in the potential user's place. Would you be interested in this new idea if you were seeing it for the first time?

GUIDELINES FOR IMPLEMENTATION

The following are some suggestions for successful implementation. With any of these factors missing, your innovation could fail.

FOSTERING OWNERSHIP

The first factor has to do with the potential user's sense of ownership or co-investment in the product. If users are involved in setting the goals for the innovation and in developing the materials associated with it, then they are more likely to use them. Unfortunately, users are often presented with finished products. However, some products are engineered to allow considerable local involvement in the modification and adaptation of the version they will implement.

RECOMMENDED STEPS

Beyond having a direct role in shaping the innovation, other recommended steps are the following:

☐ Face-to-face interaction. Face-to-face interaction gives the opportunity for two-way communication that fosters rapport and builds trust between teachers and administrators. Teachers will feel you are behind what they are attempting to do if you make a definite point of finding out what their concerns and difficulties are. Face-to-face interaction with peers is also important, especially if they have had experience with the product.

☐ Administrative support. It is crucial to have administrative support for any innovation. But beyond the fact that the innovation must have high priority with decisionmakers, it is also important that teachers see that what they are doing is important. The support of administrators helps provide this.

☐ Special status and recognition. Special inducements to participation are helpful. But more important than salary increments or other external rewards is the sense of being involved, in a significant way, in something worthwhile.

MAKING THE INNOVATION PRACTICAL

Users also must believe the innovation is actually do-able. This process of acceptance is illustrated by the DIU (dissemination-implementation-utilization) model developed by Dunn et al. The middle term, implementation, actually consists of two distinct steps.

INFLUENCING THE DECISION TO ADOPT

First, potential users mentally assess the value of the innovation for their particular situation. It is at this point that they make the decision whether to implement it on a trail basis, or to drop it from consideration.

Successful transition to a trial stage of implementation depends on how useful or valuable the innovation appears to be to the potential user. A positive appraisal is influenced by the clarity of information about the innovation. This must include specific details about goals, rationale, financial costs, and procedures for implementation. The more specific the information is, the easier it will be for a potential user to evaluate its usefulness to his situation.

Some factors that are likely to influence the decision to try out a new product are:

☐ the ease of adopting the program to local conditions
☐ the relevance of the program to achieving local objectives
☐ the availability of external funds
☐ the assessed quality, particularly the practical usefulness, of the materials
☐ techers' advance knowledge of exactly what will be expected of them; i.e., changes in role or established practices, if any

MAKING THE FIELD TEST A SUCCESSFUL EXPERIENCE

The next step in implementation is the experimental field test. In this step, high priority should be given to staff training, for both teachers and administrators. Administrators' support and understanding of the implementation is important. Adequate staff training is crucial in building the confidence and skill necessary for a successful field test. This staff training should involve some actual demonstrations with opportunities for "hands on" experience with the product.

The success of implementation also relies on the continuing collaboration and exchange of information between teachers, administrators, and external resources. Lines of communication should be kept as open as possible. Again, frequent interaction, with a collaborative spirit on all sides, is the key to success. Workshops and inservice training, in addition to the initial training, should be available as needed to clear up any confusion and unexpected problems, and to make necessary revisions in the product. It is also helpful at this time to designate individuals with the special responsibility of "trouble-shooting" any difficulties that may arise.

It is extremely important to assure that all the necessary materials and resources are available on a timely basis. Delay in the delivery of materials should be avoided. Unless support materials are made available promptly, teachers will quickly lose interest in the innovation.

It is also important to avoid excessive overload on teachers during the experimental trial stage. Supplementary help and support may be needed to get teachers "over the hump" during the initial period of learning how to use the product, particularly if it is complex and unfamiliar.

Finally the use of teachers who participated in the first trial as consultants and workshop leaders for other teachers is a good method of preparing for a full-scale implementation. This will increase the effectiveness of preparation since these teachers will be able to discuss the practical considerations of classroom use of the product. Also, teachers will probably place more trust and credibility in their peers than in external resource personnel. These teachers will make up a cadre of experienced advocates, who have already integrated the new practices into their teaching. This can be an extremely persuasive way to remove doubts and reservations of newcomers.

Following the suggestions discussed above can go a long way towards securing the results for implementation and maintenance that you desire. They can also be used for diagnostic and corrective purposes. Let us suppose that your efforts so far appear to be stymied. The implementation process appears to be in the doldrums. What to do? If you analyze the problem in terms of the above scheme, and you find one of these suggestions applies, you will have some guidance for corrective action.

Continued utilization, or maintenance of product use, is another matter. This depends on the evaluation of the product's effectiveness, efficiency, and usefulness. The factors which influence maintenance will be dealt with later. Among the techniques of fostering implementation, however, providing workshops and technical assistance are two of the most useful and practical. The following discussion gives more specifics on how to have a successful experience in either type of activity.

WORKSHOPS

Workshop as used here refers to an assembled group of people under supervision, who meet together to improve their proficiency in the use of instructional materials, increase their knowledge of the materials, or solve problems with the use of the materials.

Workshops provide the opportunity for concentrated periods of supervised practice, with focused demonstrations, a minimum of distractions, and the opportunity for a high degree of individual participation. The individual has an opportunity not only to become more knowledgeable, but also to practice using materials at his or her own pace. On the negative side, workshops require the commitment of blocks of time from participants and supervisors and special facilities and materials. A successful workshop requires careful attention in the planning, and in motivating participants.

The following suggestions are adapted, with permission, from *17 Teaching Tools for Adult Educators*, by Pines, Bail and Cushman. These procedures have reference to developing skills in the use of materials with which many teachers are unfamiliar, such as competency tests, competency-based instructional materials, or other innovations.

Suggestions for Preparation:

- ☐ Prepare the workshop with all the necessary materials. Make sure that all participants have enough space to work comfortably.
- ☐ Prepare the workshop to enable effective supervision by a minimum staff.
- ☐ If a demonstration is to be given, preparation for this is necessary.

Suggestions for the Presentation:

- ☐ Prepare the participants. Put them at ease and explain the relevance and the necessity of the practice or the workshop.
- ☐ The introduction should be used to stimulate interest and to provide motivation.
- ☐ Allow participants to practice. Constant supervision must be maintained although it may be impossible to supervise each student individually.
- ☐ Guide initial trials. If the participants use the correct method to accomplish the skill the first time, it is likely that they will continue to do it correctly. If they proceed incorrectly on the first attempt, it may be difficult to correct the error—especially if it is repeated and becomes a habit of doing it incorrectly.
- ☐ Make sure that participants use any necessary materials such as charts, pictures, models, etc. as instructed.

☐ Allow for questions during and after the practice session.

Suggestions to Insure Success:

☐ If there is not a sufficient amount of material or space, the class should be broken into smaller groups.
☐ Use as many supervisors as necessary. Peer supervisors may be appropriate.
☐ After the participant has mastered the basic skill, it is desirable to get the student involved in a realistic project, in order to stimulate motivation.
☐ Individual projects provide incentive to attain proficiency that meets professional standards. These individual projects can be geared to individual abilities.
☐ The practice should follow a demonstration immediately. This is when the participants will have the clearest picture of how to perform the skill. The longer they have to wait to practice the skill the less likely they are to remember the procedure.
☐ It is important that the participant should be relaxed. It is very difficult to practice complicated skills under a stressful situation.
☐ Provide encouragement (especially when someone is having difficulties). If many participants make the same mistakes, it is advisable to stop the practice and give an explanation or another demonstration, stressing the correct procedure.

Suggestions for Follow-Up:

☐ Each participant should be tested at the end of the practice session. The student should be able to perform the task efficiently.
☐ The final evaluation should provide feedback to the instructor so that he or she can estimate if additional practice or instruction is needed.
☐ If the skill being practiced is a prerequisite to more complex skills, then it is necessary to ensure that the student have mastered the skill.

The result of a carefully planned workshop, or workshop series, should be participant who has been adequately prepared in the skills required to begin to use new products and practices. In addition, an optimal experience will motivate participants to try the new materials for an extended period of time. However, long term involvement and use can be considerably increased by further interaction such as technical assistance and extended staff development activities can foster.

TECHNICAL ASSISTANCE

Technical assistance is one way to ensure the use of an innovation. It is fostered through providing assistance with problem solving, training in the use of materials, etc. It also helps in developing longer term commitment to an innovation.

5 Steps Toward Greater Commitment. A 5-step process can be used:

1) *Orientation.* In this step, a technical resource person provides the information and practice that will be required for new users. A convincing rationale for using the new materials can also be given at this time.
2) *Recruitment.* This step involves inviting participants to make a longer term commitment to use of the materials, at least for a trial period. In effect, an informal contract is struck between the instructor and the technical resource person. The latter explains exactly what will be required of the teacher, and what sort of assistance the technical assistant will provide in return. Teachers should understand what is expected of them. They then agree to try the materials before deciding the extent of their future involvement.
3) *Confirmation.* Shortly after recruitment, the technical resource person should meet with the instructor to determine whether they have had any unusual problems. They then seek to confirm the commit-

ment, this time for a longer period.

4) *Implementation.* This step involves setting up a plan for future use. It involves assessing how to adapt the materials to the needs and interests of the teacher and the requirements of the site.
5) *Integration.* This phase is the most extensive and demanding. It involves working with the instructor on a regular basis, to find and eliminate the "bugs" in the system. This process may take weeks or even months, the length of time depending on the complexity of the innovation.

Technical assistance is an alternative to more traditional inservice approaches. However, for technical assistance to work, there must be a mutual understanding or agreement between the technical assistant and the client. First, there must be an explicit agreement in regard to the need and the activities to be engaged in. Second, there should be agreement on the underlying premises of the activity. According to the authors of the *Technical Assistance Development System*, Trohanis and Jackson, these are:

☐ Mutual planning throughout the technical assistance process;
☐ Commitment to the process as a two-way street demanding the time and effort of both parties;
☐ Continuous, responsive, and coordinated communication between agent and client;
☐ A trusting relationship;
☐ Deployment of solid instructional ideas and practices through a mix of the best resources available—consultants, materials, and the like;
☐ A focus on integrating experiences for the client that blend research, knowledge, skill, and decision making;
☐ Allowing opportunities both for remedying client weaknesses and for enhancing existing skills.

Sample "Contracts". Sample Technical Assistance Agreements are:

1) A TA (technical assistant) is working with a teacher who has agreed to adopt competency-based teaching materials, e.g., student objectives stated in performance terms, criterion-referenced tests (CRT's) of students' progress, self-paced instructional packets, etc. The teacher has agreed to try out the materials for one month and begin recording students' attainments as measured by the CRT's. The teacher has also agreed to provide feedback regarding any deficiencies of the materials. The TA, on his part, has agreed to help chart students' progress and facilitate the new recordkeeping system during the initial phase.
2) A TA is working with several teachers on the problem of adapting their curriculum to the needs of handicapped students. The teachers have initially agreed to spend time observing model programs for the handicapped within their district. The TA has agreed to facilitate visits to these model programs, and has also arranged for meetings between the teachers and instructors in the model program to share ideas and determine their in-service needs. They have all agreed that the outcome will shape subsequent activities and agreements.
3) A vocational school has begun to integrate basic skills instruction into its regular curriculum. A TA has begun to work with several teachers who expressed the need for assistance in implementing this program. The teachers have agreed to pick out promising strategies from a list other teachers have found useful, provided by the TA. The teachers have also agreed to visit shops of other teachers and make note of any techniques they can use. The TA agrees to help them refine and implement these ideas.

In sum, technical assistance is not a one-shot offer of help or advice. Where new instructional materials and their effective use are involved, technical assistance needs to be a continuous process designed to lead the product user by careful steps toward greater proficiency and consistency in the use of the product.

Maintenance

Maintenance of product use refers to the continued use of a product after external support of the implementation period has ended. Many innovations have been implemented experimentally, and apparently successfully, and then dropped later when support ended.

EVALUATING EFFECT

The continued use of an innovation depends on its effectiveness, efficiency, and usefulness. Effectiveness refers to the successful achievement of program goals. Efficiency is the extent to which the goals are met in an economical manner. The usefulness of the program is determined by the persistence of the needs which the product was intended to meet. If the needs or priorities change with time, efficient and effective innovations may still be dropped for lack of relevance. Favorable evaluation leads to continued usage.

Initially, the likelihood of continued use by a school district is based largely on their field test experience. Therefore, expectations of the program should be clearly stated in objective terms before the field test. Also, teachers should be informed before the trial about any records or observations they are to make for purposes of evaluation.

The continued utilization of any innovation in the classroom involves two different types of evaluation. The teachers' behaviors are evaluated by their administrator to determine their use of the program. If favorable, the principal might provide encouragement and approval, and the teacher would presumably continue to use the program.

But teachers also evaluate the effectiveness of the program as implemented in the shop or classroom. If they feel it is successful, they are likely to continue usage, particularly if given some incentive to do so. If they have an unfavorable attitude toward the program, they might consult with other teachers for advice, ask their principal for suggestions, or obtain further in-service training in the use of the program.

MAINTAINING INTEREST

Often the innovation is not continued because of a lack of interest. Administrators are primarily interested in achieving their educational goals efficiently. As long as they are convinced a program enables them to do this, they are likely to continue using it. A recurring program of evaluation is needed to allow administrators to continue to judge the effectiveness of the program and to improve it.

Perhaps a more difficult problem is the frequently observed decrease of interest on the part of teachers once the glamor of a new program fades. After the excitement of the first year of implementation, teachers often lose their enthusiasm for the innovation and gradually stop using it, or use its materials in traditional or unintended ways.

Continuing evaluation and revision of the program will tend to keep teachers interested in the program, but it is likely that they will use it more effectively if additional incentives are provided. When teacher enthusiasm wanes incentives can be used to keep their interest up.

Possible methods include:

☐ A newsletter which can be used to provide stories about various teachers' methods in using the innovation. This allows an exchange of ideas that will inspire teachers to be creative; it gives recognition to the teachers featured so they feel their efforts are important.

✓ ☐ Another means of giving teachers recognition and prestige is for their administrators to invite them to explain their techniques to their peers in an in-service workshop or demonstration class. This would not only encourage and support them but would serve to interest other teachers in continuing to use the innovation.

☐ Another form of recognition involves the use of tangible rewards. Monetary benefits may seem to be the most obvious reward, but some evidence shows that money alone is not the best incentive. Teachers respond positively to released time to allow them to attend additional courses or visit demonstration schools. Certificated of accomplishment or letters of recognition are also useful. This is particularly rewarding if it is placed in the teacher's personal file on which future promotions and wage increases are based.

STAFF DEVELOPMENT

Product utilization is only a small part of a larger goal, namely, educational program improvement. In reminding ourselves of this fact, we also remember that optimal product utilization is a matter for long-term staff support. The continuous need for staff support activities does not reflect badly on instructors. The fact is simply that as conditions constantly change, old competencies are no longer adequate to meet the new challenges. So our concern with product utilization does not stop when we consider instructors have gotten "up to speed" and are fully trained and competent. Efforts must continue.

The following are some suggestions for staff development exercises related to product utilization.

1. **Provide training in selecting quality instructional products.**
   Teachers can be trained to evaluate new instructional products as they come along. Help teachers apply the principles of selecting products which fit their needs and circumstances. Regular workshops, or other forms of inservice education, may be appropriate vehicles for accomplishing this objective.
2. **Provide training in evaluating the impact of instructional materials on teaching and student learning.**
   Even ideally suited products and practices eventually become dated. Teachers also need to evaluate their instructional materials regularly. In so doing, they should see these materials as only one element affecting their total performance and—the most important outcome—the learning of their students. The whole field of evaluation research is a dynamic and changing one. To be more effective, the teacher needs to be up-to-date on relevant evaluation techniques. The classroom or shop is then the laboratory for the teacher to keep checking student progress and what contribution the materials being used make toward that progress. (One helpful source: *Handbook on Teacher Evaluation*, Jason Millman, editor).
3. **Provide regular refresher courses on the variety of instructional products available in the field.**
   The variety of instructional products, as well as technology, is constantly changing. The teacher who wants to stay abreast of these developments needs regular refresher courses which lay out the alternatives, newer materials and techniques, etc.

The above suggestions are minimum steps toward improving product utilization through the professional development of teachers. You can play a vital role,

not merely in distributing quality products, but in helping teachers make their own product selections as they have need. But watch out: You may be working yourself out of a job!

SAMPLE REFERENCES:

Dunn, J.A. et al., *Instructional Systems Options and Guidelines for the Dissemination and Implementation of Career Education.* Palo Alto, CA: American Institutes for Research, 1974.

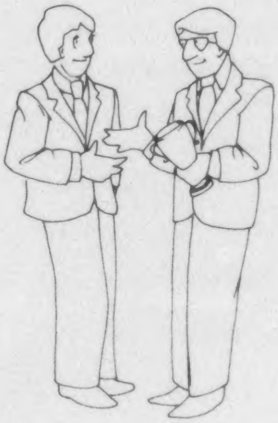
Frank, R.M. *ISSOE Managing Student Progress: Field Test.* Ithaca, NY: Cornell Institute for Occupational Education, 1980.

Millman, J. (Ed.) *Handbook of Teacher Evaluation.* Beverly Hills, CA: Sage Publications, 1981.

Paisley, W.J. & Butler, M. (Eds.) *Knowledge Utilization Systems in Education: Dissemination, Technical Assistance, Networking.* Beverly Hills, CA: Sage Publications, 1983.

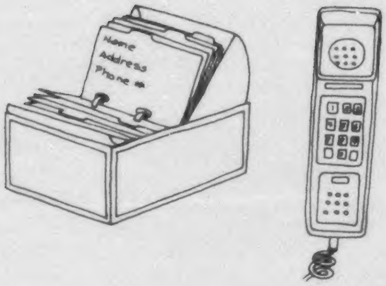
Pines, A.L., Bail, J.P. and Cushman, H.R. *17 Teaching Tools for Adult Educators.* Adult Education Series. Ithaca, NY: Department of Education, Cornell University, 1975.

Trohanis, P. and Jackson, E. The Technical Assistance Approach to Inservice. *Educational Leadership,* 1980, *37,* 386-389.



PART II

ORGANIZATIONAL LISTINGS: GENERAL RESOURCES



MAJOR CURRICULUM RESOURCES FOR ALL PROGRAM AREAS

Aerospace Education Foundation—DC

American Association for Vocational Instructional Materials (AAVIM)—GA

American Vocational Association (AVA)—VA

(See also topical listings for other professional organizations)

Associated Builders and Contractors, Inc.—DC

Association for Supervision and Curriculum Development (ASCD)—VA

Center for Social Organization of Schools (CSOS)—MD

Center for Educational Policy and Management—OR

Center for Studies in Vocational Education—FL

Cornell Institute for Occupational Education (CIOE)—NY

Consumer Education Resource Network (CERN)—VA

Council for Educational Development and Research (CEDaR)—DC

Curriculum Publications Clearinghouse (CPC)—IL

Educational Resources Information Center (ERIC)—DC

- ERIC Clearinghouse on Adult Career and Vocational Education—OH
- ERIC Clearinghouse on Reading and Communication Skills—IL
- ERIC Clearinghouse on Rural Education and Small Schools—NM
- ERIC Clearinghouse on Teacher Education—DC
- ERIC Clearinghouse on Urban Education—NY
- ERIC Document Reproduction Service (EDRS)—MD

Interstate Distributive Education Curriculum Consortium (IDECC)—OH

Instructional Objectives Exchange (IOX)—CA

Mid-America Vocational Curriculum Consortium (MAVCC)—OK

Mid-Continent Regional Educational Laboratory (McREL)—MO

National Advisory Council for Vocational Education (NACVE)—DC

National Center for Research in Vocational Education (NCRVE)—OH

National Education Association (NEA)—DC

National Information Center for Educational Media (NICEM)—CA

National Institute of Education (NIE)—DC

(See also Regional Labs)

National Marketing and Distributive Education Service Center—VA

National Referral Center—DC

National Network for Curriculum Coordination in Vocational-Technical Education

- East Central Network for Curriculum Coordination—IL
- Midwest Curriculum Coordination Center—OK
- Northeast Curriculum Coordination Center—NJ
- Northwestern Curriculum Coordination Center—WA
- Southeast Curriculum Coordination Center—MS
- Western Curriculum Coordination Center—HI

National Research Coordinating Unit Association (NRCUA)—CO

Peace Corps—DC

Regional Labs

- Appalachia Educational Laboratory (AEL)—WV
- Far West Laboratory for Educational Research and Development (FWL)—CA
- Northwest Regional Education Laboratory (NWREL)—OR

- Research for Better Schools (RBS)—PA
- Southwest Educational Development Laboratory (SEDL)—TX
- Southwest Regional Laboratory for Educational Research and Development (SWRL)—CA

Research Coordinating Units (RCU's)—See various states

South Central Curriculum Network (SCCN)—NC

State Advisory Councils for Vocational Education (SACVE's)—See various states

State Education Agencies (SEA's)—See various states*

U.S. Cooperative Extension Service—DC

U.S. Department of Education (USDE)—DC

U.S. Department of Labor, Bureau of Labor Statistics—DC

U.S. Department of Labor, Employment and Training Administration (ETA)—DC

U.S. General Services Administration, Federal Information Center—DC

U.S. General Services Administration, National AudioVisual Center—DC

U.S. Government Printing Office (GPO)—DC

Vocational-Technical Consortium of States (V-TECS)—GA

For address/phone numbers, see listings by state.

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*Under most state listings for state education agencies, the following types of resources can be found: chief state school officers, civil rights coordinators, sex equity coordinators, state directors of vocational eduction, and others. See the state listings for comprehensive information.

VOCATIONAL CURRICULUM RESOURCES: BY STATE

ALABAMA

Agricultural Experiment Station
Auburn University
Auburn, AL 36849
(205) 826-4840

Center for Vocational and Adult Education
203 Petrie Hall
Auburn, AL 38849
(205) 826-4271

Chief State School Officer
State Superintendent of Education
State Department of Education
483 State Office Building
Montgomery, AL 36104
(205) 832-3316

Cooperative Extension Service
Auburn University
Auburn, AL 36849
(205) 826-4444

Instructional Materials,
Agribusiness Education
101 Petrie Hall
Auburn, AL 36849
(205) 826-4000

Instructional Materials,
Trade & Industrial Education
202-B Skyland Boulevard
Tuscaloosa, AL 35405
(205) 759-5448

Research Coordinating Unit
State Office Building
Room 847
Montgomery, AL 36130
(205) 832-3476

Sex Equity Coordinator
State Office Building
Vocational Division
Room 848
Montgomery, AL 36130
(205) 832-5776

State Advisory Council
Executive Director, SAC
Auburn University
P.O. Box 27
Auburn, AL 36830
(205) 826-5097

State Career Education Contact
Career Education Coordinator
State Department of Education
111 Coliseum Boulevard
Montgomery, AL 36130
(205) 832-5065

State Curriculum Liaison Representative
State Office Building
Room 802
Montgomery, AL 36130
(205) 832-3473

State Director of Vocational Education
State Department of Education
State Office Building
Room 887
Montgomery, AL 36130
(205) 832-3364

Vocational Curriculum Development Unit
State Department of Education
State Office Building
Room 802
Montgomery, AL 36130
(205) 832-3473

ALASKA

Agricultural Experiment Station
University of Alaska
Fairbanks, AK 99701
(907) 479-7305

Chief State School Officer
Commissioner
State Department of Education
Alaska State Office Building
Pouch F
Juneau, AK 99801
(907) 465-2800

Cooperative Extension Service
University of Alaska
Fairbanks, AK 99701
(907) 479-7246

Northern Institute
650 West International
Airport Road
Anchorage, AK 99503
(907) 274-3691

Research Coordinating Unit
State Department of Education
Alaska Office Building
Pouch F
Juneau, AK 99811
(907) 465-2980

Sex Equity Coordinator
State Department of Education
Alaska Office Building
Pouch F
Juneau, AK 99811
(907) 465-2985

Southeast Regional Resource Center
538 Willoughby
Juneau, AK 99801
(907) 586-6806

State Advisory Council
Executive Director, SAC
205 North Franklin Street, #2
Juneau, AK 99801
(907) 586-1736

State Career Education Contact
Career Education
State Department of Education
Alaska Office Building
Pouch F
Juneau, AK 99811
(907) 465-2980

State Curriculum Liaison Representative
State Department of Education
Alaska Office Building
Pouch F
Juneau, AK 99811
(907) 465-2980

State Director of Vocational Education
State Department of Education
Alaska Office Building
Pouch F
Juneau, AK 99811
(907) 465-2980

ARIZONA

Agricultural Experiment Station
The University of Arizona
Tucson, AZ 85721
(602) 626-2711

Arizona Center for Vocational Education
P.O. Box 15905
Northern Arizona University
Flagstaff, AZ 86011
(602) 523-5442

Chief State School Officer
State Superintendent of Public Instruction
State Department of Education
1535 West Jefferson Street
Phoenix, AZ 85007
(602) 271-4361

Cooperative Extension Service
The University of Arizona
Tucson, AZ 85721
(602) 626-4829

Research Coordinating Unit
State Department of Education
Vocational Education Division
1535 West Jefferson Street
Phoenix, AZ 85007
(602) 255-5351

Sex Equity Coordinator
State Department of Education
Vocational Education Division
1535 West Jefferson Street
Phoenix, AZ 85007
(602) 255-5357

State Advisory Council
Executive Director, SAC
4725 North 19th Avenue, #2
Phoenix, AZ 85015
(602) 255-5040

State Curriculum Liaison Representative
State Department of Education
Vocational Education/Research Coordinating Unit
1535 West Jefferson Street
Phoenix, AZ 85007
(602) 255-5351

State Director of Vocational Education
State Department of Education
Vocational Education Division
1535 West Jefferson Street
Phoenix, AZ 85007
(602) 255-5343

ARKANSAS

Agricultural Experiment Station
University of Arkansas
Fayetteville, AR 72701
(501) 575-4446

Arkansas Curriculum Dissemination Center
University of Arkansas
Graduate Education Building
Room 115
Fayetteville, AR 72701
(501) 575-4758

Chief State School Officer, Director
State Department of Education
State Education Building
Little Rock, AR 72201
(501) 371-1464

Cooperative Extension Service
University of Arkansas
P.O. Box 391
Little Rock, AR 72203
(501) 376-6301

Media Implementation Center
7701½ Scott Hamilton Drive
Little Rock, AR 72209
(501) 371-1153/1154

Research Coordinating Unit
Arkansas Department of Education
Vocational and Technical Education
Division
Education Building West
Room 305D
Little Rock, AR 72201
(501) 371-1855

Sex Equity Coordinator
State Department of Education
Vocational and Technical Education
Division
Education Building West
Room 409D
Little Rock, AR 72202
(501) 371-2974

State Advisory Council
Executive Director, SAC
Continental Building #511
Little Rock , AR 72201
(501) 371-1550

State Career Education Contact
Community Education/Career
Education
Arkansas Department of Education
Arch Ford Education Building
Capitol Mall
Little Rock , AR 72201
(501) 371-1894

State Curriculum Liaison
Representative
Vocational and Technical Education
Division
Arkansas Department of Education
Education Building West
Room 305D
Little Rock AR 72201
(501) 371-5630

State Director of Vocational Education
State Department of Education
Vocational and Technical Education
Division
Education Building West
Room 406D
Little Rock , AR 72201
(501) 371-2165

CALIFORNIA

Agricultural Experiment Station
Systemwide Office
Division of Agricultural Sciences
317 University Hall
Berkeley, CA 94720
(415) 642-9300

Berkeley Branch, AES
101 Giannini Hall
University of California at Berkeley
Berkeley, CA 94720
(415) 642-7171

Davis Branch, AES
228 Mrak Hall
University of California at Davis
Davis, CA 95616
(916) 752-1605

Riverside Branch, AES
University of California at Riverside
Riverside, CA 92521
(714) 787-3101

Cooperative Extension Service
Systemwide Office
Division of Agricultural Sciences
349 University Hall
Berkeley, CA 94720
(415) 642-9300

Berkeley Branch, CES
University of California at Berkeley
Berkeley, CA 94720
(415) 642-9300

San Joaquin Valley Agricultural
Research and Extension Service
Parlier, CA 93648
(209) 646-2794

Chief State School Officer
Superintendent of Public Instruction
State Department of Education
721 Capitol Mall
Sacramento, CA 95814
(916) 445-4338

Far West Laboratory for Educational
Research and Development (FWL)
1855 Folsom Street
San Francisco, CA 94103
(415) 565-3000

Instructional Objectives Exchange
(IOX)
Box 24095 Department 2A
Los Angeles, CA 90024

National Information Center for
Educational Media (NICEM)
University of Southern California
University Park
Los Angeles, CA 90007
(213) 743-5408
(800) 421-8711

Research Coordinating Unit
Education Support Services
State Department of Education
721 Capitol Mall
Sacramento, CA 95814
(916) 323-3481

Sex Equity Coordinator
721 Capitol Mall
Fourth Floor
Sacramento, CA 95814
(916) 445-6726

Southwest Regional Laboratory for Educational Research and Development (SWRL)
4665 Lampson Avenue
Los Alamitos, CA 90720
(213) 598-7661

State Advisory Council
Executive Director, SAC
1900 S Street
Sacramento, CA 95814
(916) 445-0698

State Career Education Contact
Personal and Career Development Services Unit
State Department of Education
721 Capitol Mall
Third Floor
Sacramento, CA 95814
(916) 323-0588

State Curriculum Liaison Representative
State Department of Education, VOICE
721 Capitol Mall
Fourth Floor
Sacramento, CA 95814
(916) 445-0404

State Director of Vocational Education
721 Capitol Mall
Fourth Floor
Sacramento, CA 95814
(916) 445-3314

U.S. Department of Education Regional Office
Region 9
50 United Nations Plaza
San Francisco, CA 94102
(415) 556-4920

Vocational and Occupational Information Center for Educators (VOICE)
State Department of Education
721 Capitol Mall
Sacramento, CA 95814
(916) 445-0404

Vocational Education Productions
California Polytechnic State University
San Luis Obispo, CA 93407
(800) 546-2295
(800) 235-4146

COLORADO

Agricultural Experiment Station
Colorado State University
Fort Collins, CO 80523
(303) 491-5371

Chief State School Officer
Executive Director
1313 Sherman Street
Denver, CO 80203
(303) 866-3162

Civil Rights Coordinator
State Board for Community Colleges
Division of Occupational Education
1313 Sherman Street
Denver, CO 80203
(303) 866-4381

Colorado Vocational Education Curriculum Materials Service
Vocational Education Building
Colorado State University
Fort Collins, CO 80523
(303) 491-5273/7577

Cooperative Extension Service
Colorado State University
Fort Collins, CO 80523
(303) 491-6281

Support Services Division
State Board for Community Colleges and Occupational Education
Centennial Building
Second Floor
1313 Sherman Street
Denver, CO 80203
(303) 866-3063

Sex Equity Coordinator
State Board for Community Colleges
Division of Occupational Education
1313 Sherman Street
Denver, CO 80203
(303) 866-4381

State Advisory Council
Executive Director, SAC
3645 West 112th Avenue
Westminster, CO 80030
(303) 466-8811

State Career Education Contact
Community Based Education Services
State Department of Education
2323 West Baker
Englewood, CO 80110
(303) 922-6164

State Curriculum Liaison Representative
Commissioner of Education
201 East Colfax
Denver, CO 80203
(303) 866-2213

State Director of Vocational Education
State Board for Community Colleges
1313 Sherman Street
Denver, CO 80203
(303) 866-3071

U.S. Department of Education Regional Office
Region 8
U.S. Customs House
1961 Stout Street
Denver, CO 80294
(303) 837-3544

U.S. General Services Administration
Consumer Information Center
Pueblo, CO 81009
(303) 948-3334

CONNECTICUT

Agricultural Experiment Station
The University of Connecticut
Storrs, CT 06268
(203) 486-2917

Chief State School Officer
Commissioner of Education
State Department of Education
P.O. Box 2219
Hartford, CT 06145
(203) 566-5061

Civil Rights Coordinator
Special Assistant for Compliance Review
Division of Vocational and Adult Education
State Department of Education
P.O. Box 2219
Hartford, CT 06145
(203) 566-7546

Cooperative Extension Service
The University of Connecticut
Storrs, CT 06268
(203) 486-4125

Research Coordinating Unit
Bureau of Vocational Program Planning and Development
Division of Vocational and Adult Education
P.O. Box 2219
Hartford, CT 06145
(203) 566-3430

Sex Equity Coordinator
State Department of Education
Bureau of Vocational Program Planning and Development
Division of Vocational Education
Room 336, P.O. Box 2219
165 Capitol Avenue
Hartford, CT 06145
(203) 566-3430

State Advisory Council
Executive Officer, SAC
61 Woodland Street
Hartford, CT 06105
(203) 566-4035

State Career Education Contact
Division of Elementary and Secondary Education
State Department of Education
P.O. Box 2219
Hartford, CT 06115
(203) 566-5808

State Curriculum Liaison Representative
Division of Vocational—Technical Schools
State Department of Education
P.O. Box 2219
165 Capitol Avenue
Hartford, CT 06145
(203) 566-3664

State Director of Vocational Education
Associate Commissioner/Director
Division of Vocational and Adult Education
State Department of Education
State Office Building
P.O. Box 2219
Hartford, CT 06145
(203) 566-3664

DELAWARE

Agricultural Experiment Station
The University of Delaware
Newark, DE 19711
(302) 738-2501

Chief State School Officer
State Superintendent of Public Instruction
J.G. Townsend Building
P.O. Box 1402
Dover, DE 19901
(302) 678-4601

Civil Rights Coordinator
State Department of Public Instruction
J.G. Townsend Building
P.O. Box 1402
Dover, DE 19901
(302) 735-4681

Cooperative Extension Service
The University of Delaware
Newark, DE 19711
(302) 738-2501

Research Coordinating Unit
Curriculum and Research
State Department of Public Instruction
J.G. Townsend Building
P.O. Box 1402
Dover, DE 19901
(302) 736-4681

Sex Equity Coordinator
State Department of Public Instruction
J.G. Townsend Building
P.O. Box 1402
Dover, DE 19901
(302) 736-4681

State Advisory Council
Executive Secretary, SAC
P.O. Box 897
Dover, DE 19901
(302) 736-4738

State Career Education Contact
State Department of Public Instruction
J.G. Townsend Building
P.O. Box 1402
Dover, DE 19901
(302) 678-4645

State Curriculum Liaison
Representative
Division of Vocational—Technical
Education
State Department of Public Instruction
J.G. Townsend Building
P.O. Box 1402
Dover, DE 19901
(302) 736-4681

State Director of Vocational Education
State Department of Public Instruction
J.G. Townsend Building
P.O. Box 1402
Dover, DE 19901
(302) 736-4638

DISTRICT OF COLUMBIA

Aerospace Education Foundation
1750 Pennsylvania Avenue, N.W.
Washington, DC 20006
(202) 637-3300

Agriculture Extension Service
U.S. Department of Agriculture
Science and Education Administration
Washington, DC 20250

Associated Builders and Contractors,
Inc.
Suite 409
444 North Capitol Street, N.W.
Washington, DC 20006
(202) 637-8800

Chief State School Officer
Superintendent of Schools
Presidential Building
415 Twelfth Street, N.W.
Washington, DC 20004
(202) 724-4222

Council for Educational Development
and Research (CEDaR)
1518 K Street, N.W.
Suite 206
Washington, DC 20005
(202) 638-3193

Educational Resources Information
Center (ERIC)
National Institute of Education
1220 19th Street, N.W.
Washington, DC 20208
(202) 254-5555

ERIC Clearinghouse on Teacher
Education
American Association of Colleges for
Teacher Education
One Dupont Circle, N.W.
Suite 610
Washington, DC 20036
(202) 293-2450

Federal Information Center
U.S. General Services Administration
Office of Public Affairs
Washington, DC 20405

National Advisory Council for
Vocational Education
425 13th Street, N.W.
Washington, D.C. 20004
(202) 376-8873

National Aeronautics and Space
Administration
400 Maryland Avenue, S.W.
Washington, DC 20546

National AudioVisual Center
U.S. General Services Administration
Washington, DC 20409
(301) 763-1896

National Bureau of Standards
Office of Technical Publications
Washington, DC 20234

National Education Association (NEA)
1201 16th Street, N.W.
Washington, DC 20036
(202) 833-4000

National Highway Traffic Safety
Administration
400 7th Street, N.W.
Washington, DC 20590
(202) 426-1828

National Institute of Education (NIE)
U.S. Department of Education—NIE
1200 19th Street, N.W.
Washington, DC 20208
(202) 254-5800

National Referral Center
Library of Congress
National Referral Center
Washington, DC 20540

Peace Corps
Information Collection and Exchange
Office of Programming and Training
Coordination
806 Connecticut Avenue, N.W.
Washington, DC 20505
(800) 424-8580

Professional and Curriculum
Development Library and Unit, DC
public schools
Division of Career Development
Programs
Browne Junior High School
24th Street and Benning Road, N.E.
Washington, DC 20002
(202) 724-8690

Research Coordinating Unit
DC Public Schools
Presidential Building
415 12th Street, N.W.
Room 904
Washington, DC 20004
(202) 724-4180

Sex Equity Coordinator
DC Public Schools
Division of Career Development
Programs
Presidential Building
Room 1010
415 12th Street, N.W.
Washington, DC 20004
(202) 724-4218

State Advisory Council
Executive Director, SAC
Jefferson Junior High School
801 7th Street, S.W.
Washington, DC 20024
(202) 488-7407

State Career Education Contact
State Coordinator
Ellington School of the Arts
35th and R Streets, N.W.
Washington, DC 20007
(202) 282-0186

State Curriculum Liaison
Representative
Supervising Director
Professional and Curriculum
Development Unit
Division of Career Development
Programs
Browne Junior High School
24th Street and Benning Road, N.E.
Washington, DC 20002
(202) 724-8690

State Director of Vocational Education
Division of Career Development
Programs
State Department of Education
Presidential Building
Room 904
415 12th Street, N.W.
Washington, DC 20004
(202) 724-4184

U.S. Cooperative Extension Service
U.S. Department of Agriculture
Washington, DC
(202) 447-3377

U.S. Department of Agriculture
Office of Governmental and Public
Affairs
Publications Division
Washington, DC 20250

U.S. Department of Commerce
Office of Communications
Washington, DC 20230
(202) 377-2000

U.S. Department of Education
Office of Vocational and Adult
Education (OVAE)
7th and D Streets, S.W.
Washington, DC 20202
(202) 245-2653

U.S. Department of Health and Human
Services
Office of Human Development Services
Washington, DC 20201

U.S. Department of Labor—Bureau of
Labor Statistics
441 G Street, N.W.
Washington, DC 20212
(202) 655-4000

U.S. Department of Labor,
Employment and Training
Administration
Bureau of Apprenticeship and Training
Employment and Training
Administration
U.S. Department of Labor
601 D Street, N.W.
Washington, DC 20213
(202) 376-6270

U.S. Environmental Protection Agency
Public Information Center
401 M Street
Washington, DC 20460
(202) 655-4000

U.S. Federal Trade Commission
Office of Public Information
Pennsylvania Avenue at 6th Street,
N.W.
Washington, DC 20580

U.S. Government Printing Office
(GPO)
Superintendent of Documents
Washington, DC 20402
(202) 783-3218

U.S. Small Business Administration
Office of Public Information
1441 L Street, N.W.
Washington, DC 20416

FLORIDA

Agricultural Experiment Station
University of Florida
Gainesville, FL 32611
(904) 392-1971

Center for Studies in Vocational
Education
2003 Apalachee Parkway
Tallahassee, FL 32301
(904) 644-5892

Chief State School Officer
Commissioner of Education
Florida Department of Education
Knott Building
Tallahassee, FL 32301
(904) 487-1785

Cooperative Extension Service
University of Florida
Gainesville, FL 32611
(904) 392-1971

Florida Vocational Journal
Editor
Center for Studies in Vocational Education
2003 Apalachee Parkway
Tallahassee, FL 32301
(904) 644-5892

Research and Development Section
Florida Department of Education
Knott Building
Tallahassee, FL 32301
(904) 488-1831

Research Coordinating Unit
Bureau of Research, Dissemination, and Evaluation
Florida Department of Education
Knott Building
Tallahassee, FL 32301
(904) 488-3995

Sex Equity Coordinator
Florida Department of Education
715 East Bird Street
Suite 306, Pan American Bank Building
Tampa, FL 32604
(813) 933-3495

State Advisory Council
Executive Director, SAC
W. V. Knott Building
Tallahassee, FL 32301
(904) 488-5308/8824

State Career Education Contact
Coordinator, Career Education
Vocational Research and Evaluation
Florida Department of Education
Knott Building
Tallahassee, FL 32301
(904) 488-3860

State Curriculum Liaison Representative
Coordinator
Division of Vocational Technical Education
Center for Studies in Vocational Education
2003 Apalachee Parkway
Tallahassee, FL 32301
(904) 488-3995

State Director of Vocational Education
Florida Department of Education
Knott Building
Tallahassee, FL 32301
(904) 488-8961

GEORGIA

Agricultural Experiment Station
University of Georgia
Athens, GA 30602
(404) 542-2151

U.S. Department of Education Regional Office
Region 4
101 Marietta Tower
Atlanta, GA 30323
(404) 221-2352

American Association for Vocational Instructional Materials (AAVIM)
120 Driftnier Engineering Center
University of Georgia
Athens, GA 30602
(404) 542-2586

Chief State School Officer
Executive Secretary
State Board of Education
State Superintendent of Schools
242 State Office Building
Atlanta, GA 30334
(404) 656-2800

Cooperative Extension Service
University of Georgia
Athens, GA 30602
(404) 542-3824

Research Coordinating Unit
Division of Vocational Program Development and Support Services
17th Floor
Twin Towers East
Atlanta, GA 30334
(404) 656-2547

Sex Equity Coordinator
17th Floor
Twin Towers East
Atlanta, GA 30334
(404) 656-2547

State Advisory Council
Executive Director, SAC
18 Executive Park Drive, N.E.
Atlanta, GA 30329
(404) 894-2385

State Career Education Contact
Career Education Coordinator
State Department of Education
Secondary Vocational Programs Division
17th Floor
Twin Towers East
Atlanta, GA 30334
(404) 656-2516

State Curriculum Liaison Representative
Division of Vocational Program Development and Support Services
17th Floor
Twin Towers East
Atlanta, GA 30334
(404) 656-2547

State Director of Vocational Education
Office
17th Floor
Twin Towers East
205 Butler Street
Atlanta, GA 30334
(404) 656-6711

Vocational Curriculum Center
Division of Program Development
3417 Oakcliff Drive
Atlanta, GA 30340
(404) 451-6158

Vocational-Technical Consortium of
States (V-TECS)
Commission on Occupational
Education
Southern Association of Colleges and
Schools
795 Peachtree Street, N.E.
Atlanta, GA 30365
(404) 897-6158

HAWAII

Agricultural Experiment Station
Hawaii Institute of Tropical Agriculture
and Human Resources
University of Hawaii
Honolulu, HI 96822
(808) 948-8139

Career Information Center
University of Hawaii
2327 Dole Street
Honolulu, HI 96822
(808) 948-6579

Chief State School Officer
Administrative Officer for the State
Board
University of Hawaii
2444 Dole Street
Bachman Hall 207
Honolulu, HI 96822
(808) 948-8207

Research Coordinating Unit
Research and Development
Office of the State Director for
Vocational Education
University of Hawaii
2327 Dole Street
Honolulu, HI 96822
(808) 948-7461

Sex Equity Coordinator
Office State Director for Vocational
Education
University of Hawaii
2327 Dole Street
Honolulu, HI 96822
(808) 948-7461

State Curriculum Liaison
Representative
Office of State Director for Vocational
Education
University of Hawaii
2327 Dole Street
Honolulu, HI 96822
(808) 948-7461

State Advisory Council
Executive Secretary, SAC
State Commisssion on Manpower and
Full Employment
335 Merchant Street, #354
Honolulu, HI 96813
(808) 548-2630

State Career Education Contact
Student Personnel Section
Department of Education
1270 Queen Emma Street, Room 902
Honolulu, HI 96813
(808) 548-7819

State Director of Vocational Education
Office of State Director for Vocational
Education
University of Hawaii
2327 Dole Street
Honolulu, HI 96822
(808) 948-7461

Western Curriculum Coordination
Center
University of Hawaii
1776 University Avenue, 216 Wist
Honolulu, HI 96822
(808) 948-7834

IDAHO

Agricultural Experiment Station
University of Idaho
Moscow, ID 83843
(208) 885-6682

Cooperative Extension Service
University of Idaho
Moscow, ID 83843
(208) 885-6639

Idaho Curriculum Dissemination
Center
Division of Vocational Education
216 College of Education
University of Idaho
Moscow, ID 83843
(208) 885-6556

Research Coordinating Unit
Program Improvement
Division of Vocational Education
650 West State Street
Boise, ID 83720
(208) 334-2932

Sex Equity Coordinator
Division of Vocational Education
650 West State Street
Room 325
Boise, ID 83720
(208) 384-3271

State Advisory Council
Executive Director, SAC
409 West Jefferson, #1
Boise, ID 83720
(208) 334-3206
(208) 375-5167

State Career Education Contact
Consultant, Special Projects
State Department of Education
650 West State Street
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ILLINOIS

Adult Education Service Centers
Adult Education
Illinois State Board of Education
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Bilingual Education Service Center
500 South Dwyer Avenue
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Career Education Service Centers
Special Programs Section
Illinois State Board of Education
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Career Guidance Centers
Special Programs Section
Illinois State Board of Education
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Curriculum Publications Clearinghouse
Western Illinois University
46 Horrabin Hall
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East Central Network for Curriculum
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National Diffusion Network
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Illinois Statewide Diffusion Network
Facilitator Center
1105 East Fifth Street
Metropolis, IL 62960
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Research Coordinating Unit
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Illinois State Board of Education
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Sex Equity Coordinator
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The Food and Nutrition Information and Education Resources Center
National Agricultural Library
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Beltsville, MD 20705
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U.S. Department of Health and Human Services
Health Resources Administration
Office of Communications
3700 East-West Highway
Hyattsville, MD 20782
(301) 443-2086

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Merrimack Education Center
101 Mill Road
Chelmsford, MA 01863
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Cooperative Extension Service
University of Nevada
Reno, NV 89557
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Research Coordinating Unit
University of Nevada, Las Vegas
4505 Maryland Parkway
Las Vegas, NV 89154
(702) 739-3188

Sex Equity Coordinator
State Department of Education
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400 West King Street
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(702) 885-3144

State Advisory Council
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State Career Education Contact
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NEW HAMPSHIRE

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State Department of Education
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Concord, NH 03301
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Cooperative Extension Service
University of New Hampshire
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(603) 862-1520

Learning Resource Center
Keen State College
Keene, NH 03431
(603) 352-1909 Ext. 236

Research Coordinating Unit
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Vocational-Technical Division
105 Loudon Road
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(603) 271-3186

Sex Equity Coordinator
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State Advisory Council
Executive Director, SAC
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State Career Education Contact
Secondary School Services
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NEW JERSEY

Agricultural Experiment Station
Cook College
Rutgers, The State University of
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Bureau of Occupational and Career
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225 West State Street
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Chief State School Officer
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Civil Rights Coordinator
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ERIC Clearinghouse on Tests,
Measurement, and Evaluation
Educational Testing Service
Rosedale Road
Princeton, NJ 08540
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New Jersey Vocational-Technical
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Rutgers, The State University of
New Jersey
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New Brunswick, NJ 08903
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Northeast Curriculum Coordination
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Bureau of Occupational and Career
Research Development
Division of Vocational Education
225 West State Street
Trenton, NJ 08625
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Building 871
New Jersey Job Corps Center
Plainfield Avenue
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ERIC Clearinghouse on Rural Education
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New Mexico State University
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Research Coordinating Unit
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Education Building
Santa Fe, NM 87503
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Sex Equity Coordinator
Vocational Education
State Department of Education
Education Building
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(505) 827-6646

Sex Equity Dissemination Center
University of New Mexico
3010 Mesa Vista
Albuquerque, NM 87131
(505) 277-5409

State Advisory Council
Executive Director, SAC
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State Director of Vocational Education
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Education Building
Capitol Complex
Santa Fe, NM 87501-2768
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Vocational Curriculum Materials
Dissemination Center
Eastern New Mexico University
Portales, NM 88130
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Vocational Education Equity Center
Department of Secondary and Adult
Teacher Education
College of Education
University of New Mexico
Albuquerque, NM 87131
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NEW YORK

Agricultural Experiment Station
Cornell University
Ithaca, NY 14853
(607) 256-4422

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(315) 787-2011

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1600 Twin Towers
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Education (CIOE)
104 Stone Hall
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ERIC Clearinghouse on Urban
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NORTH CAROLINA

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Raleigh, NC 27650
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North Carolina Department of
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Raleigh, NC 27611
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Region 1
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Williamston, NC 27892
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612 College Street, Room 200
Jacksonville, NC 28540
(919) 455-8100

Region 3
P.O. Box 549
Knightdale, NC 27545
(919) 266-9282

Region 4
P.O. Box 786
Carthage, NC 28327
(919) 947-5871

Region 5
P.O. Box 21889
Greensboro, NC 27420
(919) 379-5764

Region 6
P.O. Box 1397
Gastonia, NC 28052
(704) 864-9971

Region 7
303 East Street
North Wilkesboro, NC 28659
(704) 648-6960

Region 8
102 Clyde Road
Canton, NC 28716
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Research Coordinating Unit
Program Improvement Unit
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(919) 733-7094

Sex Equity Coordinator
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Raleigh, NC 27611
(919) 733-3551

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Division of Vocational Education
State Department of Public Instruction
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Career Education Coordinator
Middle Grades and Junior High School
State Department of Public Instruction
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State Director of Vocational Education
State Department of Public Instruction
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NORTH DAKOTA

Agricultural Experiment Station
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State University Station
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Cooperative Extension Service
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State University Station
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ERIC Center, North Dakota
Chester Fritz Library
University of North Dakota
Grand Forks, ND 58202
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North Dakota State Vocational
Curriculum Center
Bismarck Junior College
Bismarck, ND 58501
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Bismarck, ND 58505
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State Office Building
Capitol Tower
Bismarck, ND 58505
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OHIO

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Ohio Agricultural Research and
Development Center
Wooster, OH 44691
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State Superintendent of Public
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Columbus, OH 43215
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The Ohio State University
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Distributive Education Service
Division of Vocational Education
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The Ohio State University
119 Townshend Hall
1885 Neil Avenue
Columbus, OH 43210
(614) 422-4277/5001

Educational Resources Information Center (ERIC), ERIC Clearinghouse on Adult Career and Vocational Education
The Ohio State University
1960 Kenny Road
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(614) 486-3655

Interstate Distributive Education Curriculum Consortium (IDECC)
The Ohio State University
1166 Chesapeake Avenue
Columbus, OH 43212
(614) 486-6708

National Center for Research in Vocational Education (NCRVE)
The Ohio State University
1960 Kenny Road
Columbus, OH 43210
(614) 486-3655

Ohio Agricultural Education Curriculum Materials Service
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(614) 422-4848

Ohio State Advisory Council on Adult, Vocational and Technical Education
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Columbus, OH 43229
(614) 891-4764

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OKLAHOMA

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Oklahoma State University
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Mid-America Vocational Curriculum Consortium (MAVCC)
1500 West Seventh Avenue
Stillwater, OK 74074
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Midwest Curriculum Coordination Center
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Oklahoma State Department of Vocational and Technical Education
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Stillwater, OK 74074
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Stillwater, OK 74074
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OREGON

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Corvallis, OR 97331
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Center for Educational Policy and
Management
College of Education
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Eugene, OR 97403
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700 Pringle Parkway, S.E.
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Laboratory (NWREL)
300 S.W. Sixth Avenue
Portland, OR 97204
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Research Coordinating Unit
Applied Research and Exemplary
Programs
State Department of Education
700 Pringle Parkway, S.E.
Salem, OR 97310
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Resource Center
Vocational Education Division
State Department of Education
700 Pringle Parkway, S.E.
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Sex Equity Coordinator
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The Pennsylvania State University
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Research for Better Schools (RBS)
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RHODE ISLAND

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Providence, RI 02908
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Home Economics Education Resource Center
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SOUTH CAROLINA

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TENNESSEE

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601 Lake Air Drive
Waco, TX 76710
(817) 772-8756

Chief State School Officer
Commissioner of Education
Texas Education Agency
201 East Eleventh Street
Austin, TX 78701
(512) 475-3271

Cooperative Extension Service
Texas Agricultural Extension Service
Texas A & M University
College Station, TX 77843
(713) 845-7800

Home Economics Instructional Materials Center
Box 4067
Texas Tech University
Lubbock TX 79409
(806) 742-3022

Occupational Curriculum Laboratory
East Texas State University
Commerce, TX 75428
(214) 886-5623

Research Coordinating Unit
Texas Education Agency
201 East Eleventh Street
Austin, TX 78701
(512) 834-4165

Sex Equity Coordinator
Texas Education Agency
201 East Eleventh Street
Austin, TX 78701
(512) 834-4207

Southwest Educational Development Laboratory (SEDL)
211 East Seventh Street
Austin, TX 78701
(512) 476-6861

State Advisory Council
Executive Director, SAC
P.O. Box 1886
Austin, TX 78767
(512) 475-2046

State Career Education Contact
Director, Career Education
Texas Education Agency
201 East Eleventh Street
Austin, TX 78701
(512) 475-6838

State Curriculum Liaison Representative
Vocational Curriculum Development
Texas Education Agency
201 East Eleventh Street
Austin, TX 78701
(512) 834-4165

State Director of Vocational Education
Associate Commissioner for Occupational Education and Technology
Texas Education Agency
201 East Eleventh Street
Austin, TX 78701
(512) 834-4298

Texas Engineering Extension Service
F.E. Drawer K
College Station, TX 77843
(713) 845-3447

Vocational Special Needs Program
College of Education
Texas A & M University
College Station, TX 77843
(713) 845-2444

U.S. Department of Education Regional Office
Region 6
Main Tower Building
Dallas, TX 75202
(214) 767-3626

Vocational Instructional Services
P.O. Box 182
Texas A & M University
College Station, TX 77843
(713) 845-6601
(713) 779-3880

UTAH

Agricultural Experiment Station
Utah State University of Agriculture and Applied Science
Logan, UT 84322
(801) 750-2215

Associate Superintendent for Vocational Education
250 East Fifth, South
Salt Lake City, UT 84111
(801) 533-5371

Chief State School Officer
State Superintendent of Public Instruction
250 East Fifth, South
Salt Lake City, UT 84111
(801) 533-5431

Civil Rights Coordinator
Specialist, Office of Civil Rights
250 East Fifth, South
Salt Lake City, UT 84111
(801) 533-5371

Cooperative Extension Service
Utah State University of Agriculture and Applied Science
Logan, UT 84322
(801) 750-2200

Research Coordinating Unit
Utah State Board of Education
250 East Fifth, South
Salt Lake City, UT 84111
(801) 533-5371

Sex Equity Coordinator
Utah State Board of Education
250 East Fifth, South
Salt Lake City, UT 84111
(801) 533-5371

State Advisory Council
Executive Director, SAC
624 East Wilmington Avenue
Salt Lake City, UT 84106
(801) 487-8619

State Career Education Contact Coordinator
Career Education Program
Utah State Board of Education
250 East Fifth, South
Salt Lake City, UT 84111
(801) 533-6091

State Curriculum Liaison Representative
Planning and Curriculum
Utah State Board of Education
250 East Fifth, South
Salt Lake City, UT 84111
(801) 533-5371/2

State Director of Vocational Education
Utah State Board of Education
250 East Fifth, South
Salt Lake City, UT 84111
(801) 533-5371

VERMONT

Agricultural Experiment Station
University of Vermont
Burlington, VT 05405
(802) 656-3131

Chief State School Officer
Commissioner of Education
State Department of Education
State Office Building
120 State Street
Montpelier, VT 05602
(802) 828-3135

Civil Rights Coordinator
State Department of Education
State Office Building
120 State Street
Montpelier, VT 05602
(802) 828-3101

Cooperative Extension Service
University of Vermont
Burlington, VT 05405
(802) 656-2990

ERIC Resource Center
State Department of Education
State Office Building
120 State Street
Montpelier, VT 05602
(802) 828-3124

Research Coordinating Unit
State Department of Education
State Office Building
120 State Street
Montpelier, VT 05602
(802) 828-3101

Sex Equity Coordinator
Vocational-Technical Education Division
State Department of Education
State Office Building
120 State Street
Montpelier, VT 05602
(802) 828-3101

State Advisory Council
Executive Director
State Advisory Council for Vocational Education
P.O. Box 1088
Montpelier, VT 05602
(802) 223-2550

State Curriculum Liaison Representative
Vocational-Technical Education Division
State Department of Education
State Office Building
120 State Street
Montpelier, VT 05602
(802) 828-3101

State Director of Vocational Education
Director of Adult and Vocational Education
State Department of Education
State Office Building
120 State Street
Montpelier, VT 05602
(802) 828-3101

VIRGINIA

Administrative Director for Vocational Education
State Department of Education
P.O. Box 6Q
Richmond, VA 23216

Agricultural Experiment Station
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061
(703) 961-6337

American Vocational Association
2020 North Fourteenth Street
Arlington, VA 22201
(703) 522-6121

Association for Supervision and Curriculum Development (ASCD)
225 North Washington Street
Alexandria, VA 22314
(703) 549-9110

Chief State School Officer
Superintendent of Public Instruction
State Department of Education
P.O. Box 6Q
Richmond, VA 23216
(804) 786-2612

Civil Rights Coordinator
State Department of Education
P.O. Box 6Q
Richmond, VA 23216
(804) 225-2030

Consumer Education Resource Network
1500 Wilson Boulevard
Suite 800
Rosslyn, VA 22209

Cooperative Extension Service
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061
(703) 961-6705

Curriculum Materials Committee
Agricultural Education Division
American Vocational Association
2020 North Fourteenth Street
Arlington, VA 22201
(703) 522-6121

National Marketing and Distributive Education Service Center
1908 Association Drive
Reston, VA 22091
(703) 476-4299

National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, VA 22161
(703) 557-4785

Research Coordinating Unit
State Department of Education
P.O. Box 6Q
Richmond, VA 23216
(804) 225-2100

Sex Equity Coordinator
State Department of Education
P.O. Box 6Q
Richmond, VA 23216
(804) 786-2648

State Advisory Council
Executive Director, SAC
217-C Draper Road, N.W.
P.O. Box U
Blacksburg, VA 24060
(703) 961-6945

State Career Education Contact
Administrative Director
State Department of Education
P.O. Box 6Q
Richmond, VA 23216
(804) 225-2094

State Curriculum Liaison Representative
Vocational Curriculum Development
State Department of Education
P.O. Box 6Q
Richmond, VA 23216
(804) 225-2074

State Director of Vocational Education
P.O. Box 6Q
Richmond, VA 23216
(804) 225-2073

Vocational Education Curriculum Center
2204 Montain Road
Glen Allen, VA 23060
(804) 262-7439/7516

WASHINGTON

Agricultural Experiment Station
Agricultural Research Center
Washington State University
Pullman, WA 99164
(509) 335-4563

Chief State School Officer
State Superintendent of Public Instruction
Old Capitol Building, FG-11
Olympia, WA 98504
(206) 753-6773

Cooperative Extension Service
Washington State University
Pullman, WA 99164
(509) 335-2511

Northwestern Curriculum Coordination Center
State of Washington
Commission for Vocational Education
Mail Stop LS-10
Olympia, WA 98504
(206) 753-0879

Research Coordinating Unit
State of Washington
Commission for Vocational Education
Mail Stop LS-10
Olympia, WA 98504
(206) 753-5672

Sex Equity Coordinator
State of Washington
Commission for Vocational Education
Mail Stop LS-10
Olympia, WA 98504
(206) 753-5651

State Advisory Council
Executive Director, SAC
120 East Union #207
Mail Stop EK-21
Olympia, WA 98504
(206) 753-3715

State Career Eduction Contact
Director of Career Education
Office of Superintendent of Public Instruction
75100 Armstrong Street, S.W.
Mail Stop FG-11
Olympia, WA 98504
(206) 753-6763

State Curriculum Liaison Representative
Walla Walla Community College
500 Tausic Way
Walla Walla, WA 99362
(509) 527-4215

State Director of Vocational Education
Executive Director
State of Washington
Commission for Vocational Education
Mail Stop LS-10
Olympia, WA 98504
(206) 753-5660

U.S. Department of Education Regional Office
Region 10
Arcade Plaza Building
Seattle, WA 98101
(206) 442-0460

WEST VIRGINIA

Agricultural Experiment Station
West Virginia University
Morgantown, WV 26506
(304) 293-2395

Appalachia Educational Laboratory (AEL)
P.O. Box 1348
Charleston, WV 25325
(304) 344-8371/5

Assistant Superintendent for Vocational Education
Capitol Complex
Charleston, WV 25305
(304) 348-2340

Chief State School Officer
State Superintendent of Schools
Capitol Complex
Charleston, WV 25305
(304) 348-2681

Civil Rights Coordinator for Vocational Education
Capitol Complex
Charleston, WV 25305
(304) 348-6320

Cooperative Extension Service
West Virginia University
Morgantown, WV 26506
(304) 293-5691

Research Coordinating Unit
State Department of Education
Marshall University
Huntington, WV 25701
(304) 696-3180

Sex Equity Coordinator
State Department of Education
B252 Capitol Complex
1900 Washington Street, East
Charleston, WV 25305
(304) 348-6315

State Advisory Council
Executive Director, SAC
L & S Building #303
812 Quarrier Street
Charleston, WV 25301
(304) 348-3784/3826

State Career Education Contact
Coordinator, Career Education
State Department of Education
1900 Washington Street, East, Room 8243
Charleston, WV 25305
(304) 348-2194

State Curriculum Liaison Representative
Vocational Curriculum Laboratory
Cedar Lakes Conference Center
Ripley, WV 25271
(304) 372-8673

State Director of Vocational Education
State Department of Education
1900 Washington Street, East
Charleston, WV 25305
(304) 348-2346

Vocational Curriculum Laboratory
Cedar Lakes Conference Center
Ripley, WV 25271
(304) 372-3688/8673
(800) 642-2670 (W.V. only)

WISCONSIN

Agricultural Experiment Station
University of Wisconsin
Madison, WI 53706
(608) 262-1234

CETA Resource Clearinghouse
Wisconsin Vocational Studies Center
University of Wisconsin
964 Educational Sciences Building
1025 West Johnson Street
Madison, WI 53706
(608) 263-3696

Cooperative Extension Service
University of Wisconsin
Madison, WI 53706
(608) 263-2775

Post Secondary Research Consultant
Wisconsin Board of Vocational, Technical and Adult Education
7th Floor
4802 Sheboygan Avenue
Madison, WI 53702
(608) 266-3705

Post Secondary Research Coordinating Unit
Wisconsin Board of Vocational, Technical and Adult Education
7th Floor
4802 Sheboygan Avenue
Madison, WI 53702
(608) 266-3393

Post Secondary Sex Equity Coordinator
Wisconsin Board of Vocational,
Technical and Adult Education
7th Floor
4802 Sheboygan Avenue
Madison, WI 53702
(608) 266-1724

Post Secondary State Director of
Vocational Education
Executive Officer and State Director
Wisconsin Board of Vocational,
Technical and Adult Education
7th Floor
4802 Sheboygan Avenue
Madison, WI 53702
(608) 266-1770

Secondary Research Consultant
State Department of Public Instruction
125 South Webster, P.O. Box 7841
Madison, WI 53707

Secondary Research Coordinating Unit
State Department of Public Instruction
125 South Webster, P.O. Box 7841
Madison, WI 53707

Secondary Sex Equity Coordinator
State Department of Public Instruction
125 South Webster, P.O. Box 7841
Madison, WI 53707

Secondary State Director of
Vocational Education
State Superintendent of Public
Instruction
Department of Public Instruction
125 South Webster, P.O. Box 7841
Madison, WI 53707

State Advisory Council
Executive Director, SAC
105½ West Main Street
Madison, WI 53703
(608) 266-7813

State Career Education Contact
Career Education Supervisor
State Department of Public Instruction
125 South Webster
Madison, WI 53707
(608) 267-9226

State Curriculum Liaison Representative
Wisconsin Board of Vocational,
Technical and Adult Education
7th Floor
4802 Sheboygan Avenue
Madison, WI 53702
(608) 266-2222

Wisconsin Foundation for Vocational-
Technical and Adult Education
5402 Mineral Point Road
Madison, WI 53705
(608) 266-1770

Wisconsin Vocational Studies Center
Wisconsin Vocational
Teacher Aids Center
964 Education Sciences Building
1025 West Johnson Street
Madison, WI 53706
(608) 263-3696

Wisconsin VTAE Curriculum Loan
Library
7th Floor
4802 Sheboygan Avenue
Madison, WI 53702
(608) 266-3705

WYOMING

Agricultural Experiment Station
University of Wyoming
Laramie, WY 82071
(307) 766-4133

Chief State School Officer
State Superintendent of Public
Instruction
State Department of Education
Hathaway Building
Cheyenne, WY 82002
(307) 777-7673

Civil Rights Coordinator
State Department of Education
249 Hathaway Building
Cheyenne, WY 82002
(307) 777-6244

Cooperative Extension Service
University of Wyoming
Laramie, WY 83071
(307) 766-4133

Research Coordinating Unit
Occupational Education
State Department of Education
252 Hathaway Building
Cheyenne, WY 82002
(307) 777-7415

Sex Equity Coordinator
State Department of Education
250 Hathaway Building
Cheyenne, WY 82002
(307) 777-7411

State Advisory Council
Executive Director, SAC
311 Banner Building
Laramie, WY 82070
(307) 742-5416

State Career Education Contact
State Director, Career Education
State Department of Education
Hathaway Building
Cheyenne, WY 82002
(307) 777-7415

State Curriculum Liaison Representative
State Department of Education
251 Hathaway Building
Cheyenne, WY 82002
(307) 777-6235

State Director of Vocational Education
State Department of Education
252 Hathaway Building
Cheyenne, WY 82002
(307) 777-7415

AMERICAN SAMOA

Chief School Officer
Director of Education
Department of Education
Pago Pago, AM Samoa 96799
633-2503

Research Coordinating Unit
Division of Vocational Education
Department of Education
Pago Pago, AM Samoa 96799
633-5237

State Curriculum Liaison Representative
State Director
Division of Vocational Education
Department of Education
Pago Pago, AM Samoa 96799
633-5238

GUAM

Agricultural Experiment Station
University of Guam
Mangilao UOG Station
Guam 96913
(671) 734-3113

Cooperative Extension Service
University of Guam
Mangilao UOG Station
Guam 96913
(671) 734-2575

Guam Community College Library
P.O. Box 23069
Guam Main Facility
Agana, GU 96921
(671) 734-4311

Research Coordinating Unit
Education Department
P.O. Box 23069
Guam Main Facility
Agana, GU 96921
(671) 734-2405

State Advisory Council
Executive Director, SAC
P.O. Box CK
Agana, GU 96910
(671) 477-7661

State Career Education Contact
Superintendent
Career Education
Guam Community College
P.O. Box 23069
Agana, GU 96921
(671) 734-4311

State Curriculum Liaison Representative
Guam Community College
P.O. Box 23069
Guam Main Facility
Agana, GU 96921
(671) 734-4311

PUERTO RICO

Agricultural Experiment Station
University of Puerto Rico
Mayaguez, PR 00708
(809) 832-4040

Chief School Officer
Secretary of Education
Department of Education
Ave. Teniente Cesar Gonzalez
Esquina Calle Calaf
Urbanizacion Industrial
Tres Monjitas
Hato Rey, PR 00919
(809) 754-1435

Cooperative Extension Service
University of Puerto Rico
Mayaguez, PR 00708
(809) 832-4040

Research Coordinating Unit
Commonwealth Department of
Education
P.O. Box 759
Hato Rey, PR 00919
(809) 754-1045
(809) 753-7275

State Curriculum Liaison Representative
Curriculum and Educational Technology
Department of Education
P.O. Box 759
Hato Rey, PR 00919
(809) 754-1015

TRUST TERRITORY OF THE PACIFIC ISLANDS

Career Education Contact
Director of Vocational Education
Bureau of Education HO
Saipan CM 96950

Contact for Belau (Palau)
Vocational Education Supervisor
Department of Education
Republic of Belau
Koror, Palau 96940

Contact for Marshall Islands
Vocational Education Supervisor
Department of Education
Majuro, Republic of the Marshall Islands
96960

Contact for Micronesia
Vocational Education Supervisor
State Department of Education
Kolonia, Ponape, CM 96941

Executive Officer, CM
Executive Officer
Board for Vocational Education
Office of Education
Commonwealth of Northern Marianas
Islands
P.O. Box 9
Saipan, CM 96950

Research Coordinating Unit
Vocational Education Supervisor
Department of Education
Kolonia, Ponape, CM 96941

State Curriculum Liaison Representative
Bureau of Education
Government of Northern Mariana
Islands/Trust Territory of the Pacific
Islands
Saipan, CM 96950

State Director of Vocational Education
Trust Territory Coordinator for
Vocational and Adult Education
Headquarters of the Trust Territory
Saipan, CM 96950

VIRGIN ISLANDS

Chief School Officer
Commissioner of Education
Department of Education
P.O. Box 630
Charlotte Amalie
St. Thomas, VI 00801
(809) 774-2810

Curriculum Development and Resource
Center
Multi-Purpose Building
First Avenue, Estate Thomas
St. Thomas, VI 00801
(809) 774-0100

Research Coordinating Unit
Vocational Education
Department of Education
P.O. Box 630
Charlotte Amalie
St. Thomas, VI 00801
(809) 774-2810

State Advisory Council
Executive Director
Hamilton House, 2nd Floor
Christiansted
St. Croix, VI 00820
(809) 773-7200

State Career Education Contact
Coordinator, Career Education
Department of Education
P.O. Box 1, Christiansted
St. Croix, VI 00820
(809) 773-1095

State Curriculum Liaison Representative
State Director
Department of Education
P.O. Box 630
Charlotte Amalie
St. Thomas, VI 00801
(809) 774-3046

PART III

RESOURCES AND REFERENCES BY PROGRAM AND TOPIC AREA

Part III includes more specifically relevant resources and information for each major program and topic area. Organizations listed herein were selected from among those in the current publication *Encyclopedia of Associations* (Detroit, MI: Gale Research Co., 17th Ed., 1983) as most relevant to the various programs. The American Vocational Association was not listed repeatedly, but should be regarded as a key resource for all areas.

AGRICULTURE AND AGRIBUSINESS

CONTEMPORARY ISSUES

A series of "National Agricultural Education Seminars," sponsored jointly by the U.S. Department of Education and the Agricultural Education Division of the American Vocational Assocation, has been organized in recent years. In July, 1980, in Kansas City, Missouri, the National Seminar identified several contemporary issues in agricultural education. The following were among the major issues identified by conference speakers and other participants.

The overriding concern of agricultural educators is to insure that agricultural education keeps pace with the rapid changes in modern agriculture and agribusiness. To set the stage, consider the changes in the agricultural situation in recent years. Instead of concerns regarding overproduction, large surpluses, support prices, allotments and the like, the problems now center on the high costs of production and marketing, the high cost of labor, and of energy. New challenges have arisen in relation to management of resources, particularly preserving non-renewable resources and assessing possible damage to the environment.

The mission of agricultural education has changed greatly since the Smith-Hughes Act of 1917. The objective then was "to prepare youth and adults for employment in farming." This situation has changed due to a growing and expanding agricultural industry, increase in the size of farms and reduction of their number, and less opportunity for work on farms in comparison with other sectors. Less than 3% of our labor force is now engaged in farming and that is projected to drop to 1½ percent by 1990.

There has also been an explosion of technical knowledge affecting agriculture. These pressures have brought about conflicting demands for agricultural education. On the one hand, those engaged in production agriculture need a far wider and broader knowledge than was true a generation ago; on the other, they need far greater specialization to prepare for the new and emerging specialities in agricultural occupations. Analyzing the needs of agriculture and agribusiness has also become much more complicated.

The successful commercial farmer today is a true businessman, an entrepreneur, an executive. It has become much more complex to operate a successful farming, farm support, or ranching enterprise. The need for business management training, accounting, computer usage, marketing and long range planning is more and more apparent. Bankers demand more evidence of these abilities and practices before they will extend credit. Also there is need to recognize, and help both commercial farmers and part-time farmers deal with, a wide range of social and economic problems in rural America.

Agricultural education faces great challenges in public education during the 1980's. Declining enrollments and financial realities have made cost-effectiveness of programs a real concern. There is also the challenge of preparing for new and emerging technologies and their greater skill requirements. As is true of the economy in general, agriculture has become more service-oriented. The demands for compute sophistication and basic academic skills is growing. Finally, the need to develop entrepreneurship and stimulate worker productivity is widely recognized.

SPECIALIZED MATERIALS SUPPLIERS

Agricultural Experiment Stations

Expert consultant and up to date information on such diverse matters as animal breeding and fertility, orchard management, conservation of natural resources, chemical waste disposal, alternative sources of energy, environmental protection, water resource management, and many more. (See state listings.)

American Association for Vocational Instructional Materials (AAVIM)

Provides resource material including manuals, teacher guides, student workbooks, audiovisual aids, transparency masters, and slide sets. Consult Georgia state listing.

Commercial/Educational Sources

A variety of sources of educational materials are found in the private sector, e.g., farm machinery manufacturers, dairy concerns, cooperatives, fertilizer manufacturers, etc. Materials and expert assistance are available.

Cooperative Extension

Provides educational programs and support networks to deal with problems in agriculture, agribusiness, e.g., applying available technology, business management, production and marketing of farm products, energy conservation. Educational materials and expert assistance provided. (See state listings.)

Instructional Materials Laboratories

Curriculum labs such as those in Alabama, Ohio, New York, Pennsylvania, and Texas (see state listings) provide a variety of materials and services, e.g., performance-based teacher manuals and student study guides, slide series, transparency masters, sample test items, in-service activities, etc.

PROFESSIONAL AND SPECIAL INTEREST ORGANIZATIONS

AATEA

American Association of Teacher Educators in Agriculture

Persons engaged in teacher education in agriculture. Division of American Vocational Association.

102 Morrill Hall
North Dakota University
Fargo, ND 58105
(701) 237-7436

ATA

Alpha Tau Alpha

See **NPHAEF**.

FFA

Future Farmers of America

Students of agriculture/agribusiness in public secondary schools; to supplement training opportunities for students preparing for careers in farming and agribusiness.

National FFA Center
Box 15160
Alexandria, VA 22309
(703) 360-3600

NACTA

National Association of Colleges and Teachers of Agriculture

Colleges and universities teaching agriculture.

608 West Vermont
Urbana, IL 61801
(217) 333-3690

NASAE

National Association of Supervisors of Agricultural Education

State and national supervisors of agricultural education; to provide a better understanding of vocational education in agriculture.

Vocational Agricultural Education Service
Office of Public Instruction
Old Capitol Building
Olympia, WA 98504
(206) 753-6717 and 753-6738

NCAE

National Council of Agricultural Employers

Serves as a clearinghouse for exchange of information on labor supply, length of employment, and other conditions of agricultural employment.

435 Southern Building
15th & H Streets, N.W.
Washington, DC 20005
(202) 628-8650

NDC

National Dairy Council

Members from all parts of dairy industry; nutrition education and research.

6300 North River Road
Rosemont, IL 60018
(312) 696-1020

NFFAA

National FFA Alumni

Same address as **FFA**.

NPASO
National Postsecondary Agricultural Student Organization
Students associated with agriculture/agribusiness and natural resources offerings in public postsecondary institutions.
Executive Director and Treasurer
Box 34
Cobleskill, NY 12043
(518) 234-7309

NPHAEF
National Professional Honorary Agricultural Education Fraternity
Honorary fraternity for agricultural educators. Also: Alpha Tau Alpha.
813 Northcrest Place
Morgantown, WV 26505
(304) 598-0359

NVATA
National Vocational Agricultural Teachers' Association
Secondary, postsecondary, and adult education teachers of vocational agriculture, state supervisory and teacher education personnel.
P.O. Box 15051
Alexandria, VA 22309
(703) 780-1862

REA
Rural Education Association
Rural educators, leaders of farm organizations, and others concerned with improving the quality of education in rural and small schools.
Office for Rural Education
Colorado State University
Ft. Collins, CO 80523

ERIC DESCRIPTORS

Adult Farmer Education
Agribusiness
Agricultural Colleges
Agricultural Education
Agricultural Engineering
Agricultural Extension
Agricultural Laborers
Agricultural Machinery
Agricultural Machinery Occupations
Agricultural Personnel
Agricultural Production
Agricultural Safety
Agricultural Skills
Agricultural Supplies
Agricultural Supply Occupations
Agricultural Technicians
Agricultural Trends
Agriculture
Agronomy
Extension Agents
Farm Management
Land Grant Universities
Natural Resources
Rural Extension
Supervised Farm Practice
Technical Education
Technical Occupations
Young Farmer Education
Vocational Agriculture
Vocational Agriculture Teachers
Vocational Education

SELECTED REFERENCES

Agricultural Education Curriculum, 1983 ERIC Update. Series No. BB 62. Columbus, OH: National Center for Research in Vocational Education, The Ohio State University, 1983.

Agricultural Education: Review and Synthesis of the Research. The ERIC Clearinghouse on Adult, Career, and Vocational Education. The National Center for Research in Vocational Education. Columbus, OH: The Ohio State University, 1978. ED 164 979

Agricultural Education: Shaping the Future. Proceedings, National Agricultural Education Seminar. Kansas City, MO, July 15–17, 1980. ED 208 62

Coping with Technology in the Agricultural Industry. *The Agriculture Education Magazine* 53 (1980): 3.

Directory of State Officials with Responsibilities for Programs of Vocational Education in Agriculture. U.S. Department of Education, Office of Vocational and Adult Education, (unpublished).

Farmer Training—Old Skills, New Technology. *Agriculture Education Magazine* 53 (1980): 11–14.

Handbook on Agricultural Education in the Public Schools. Interstate Printers and Publishers, Inc., 1980.

National Ag Occupations Competency Study. National Study for Identifying and Validating Essential Agricultural Competencies Needed for Entry and Advancement in Major Agriculture and Agribusiness Occupations. U.S. Department of Health, Education, and Welfare, Office of Education. U.S. Government Printing Office, Washington, DC 20402

Review and Synthesis of Research in Agricultural Education. Columbus, OH: The Center for Research and Leadership Development in Vocational and Technical Education, The Ohio State University, 1966.

Priorities for Research in Agricultural Education. ED 210 556

Project 2000, Basic Principles for Agriculture and Agribusiness Education, Department of Agricultural Education, Iowa State University, Ames, IA, 1976.

Summaries of Research and Development Activities in Agricultural Education, 1974-1975, United States of America. ED 114 635

Summaries of Research and Development Activities in Agricultural Education, 1975-1976, United States of America. ED 134 707

Summaries of Research and Development Activities in Agricultural Education, 1976-1977, United States of America. ED 151 532

Summaries of Research and Development Activities in Agricultural Education, 1977-1978, United States of America. ED 167 781

Summaries of Research and Development Activities in Agricultural Education, 1978-1979, United States of America. ED 187 894

Summaries of Research and Development Activities in Agricultural Education, 1979-1980, United States of America. ED 205 706

Technology in Agricultural Mechanization. *Agriculture Education Magazine* 53 (1980): 8-9.

Technology in the Agricultural Industry. *Agriculture Education Magazine* 53 (1980): 4-5.

The Potential for Producing Energy from Agriculture. *Farm Management Reports*, Volume 79, No. 4, June 1979.

Topic Analysis for Vocational Teacher Education. Agriculture Education. Columbus, OH: Ohio Department of Education, Division of Vocational Education, 1978.

Vocational Materials for Agriculture and Agribusiness Education. Available from federal agencies. Washington, DC: Human Resources Mangement, Inc., 1980.

ERIC References (other than above):

ED 151 526
ED 208 190
ED 209 539
ED 209 541
ED 210 442
ED 210 520
ED 212 860
ED 212 908
ED 218 284

BUSINESS AND OFFICE OCCUPATIONS EDUCATION

CONTEMPORARY ISSUES

The major current issues in business and office occupations education fall into the following areas: a) the impact of technology on jobs and careers; b) the unmet needs of industry; c) developing up-to-date curricula; d) identifying effective teaching and learning strategies; e) overcoming sex stereotypes; and f) meeting basic skill requirements of jobs.

The impact of microprocessor technology is strongly evident in the information processing practices in business offices. The total social and working environment is in many cases undergoing revolutionary change. Whereas basic bookkeeping/accounting, communications, business math, shorthand/transcription, and typewriting use many skills which have remained relatively stable, business data processing, word processing, and all aspects of information management have changed radically. The demands are great upon educators, curriculum specialists, and guidance personnel to stay abreast of these volatile content areas. While business and office educational practices reflect these developments, the challenge remains unprecedented in the face of changes which cannot be wholly predicted.

A positive and challenging aspect of the field is the emergence of a whole new set of growth-oriented career paths. Entry level office positions, formerly considered a dead end in terms of career developments, present far more opportunities as a direct result of technological changes. Acquiring data entry skills, for example, can lead to developing programming and data managing skills and entry into one of the most rapidly expanding fields. Word processing and records management experience offers possibilities in administrative support and management-related positions. Finally, the advent of electronic mail, teleconferencing and other related technologies gives experience which can open out into the field of telecommunications. These possibilities underscore how important the guidance function has become in business education. The "automated office" need not be considered a threat for the adequately informed career entrant.

In spite of these promising aspects, there exists a critical shortage of clerical workers. In addition, data processing personnel are urgently needed in industry at large. Overcoming these deficits depends on adequate information about careers, and curricula and educational programs which are responsive to the needs of industry.

Current research and development in business education reveal several key concerns in the areas of curriculum and instruction. Particularly in areas of volatile content mentioned before, technological changes have made the issue of identifying the content of paramount importance. Skills and knowledge required for today's office technology needs to be better understood. Rapid developments demand identification of the most transferable skills. Large capital investments needed to acquire modern equipment for instruction also suggests the need to better understand these processes so that the optimal combinations of equipment may be decided upon.

Technological innovations are beginning to have a large impact on the teaching/learning process itself. Programmed instruction, individualized and computer-assisted instruction, and audio-visual tutorial instruction are several methods being more widely used. Improved efficiency and flexibility in teaching/-learning time are part of the rationale. Additionally, the computer is being more widely used particularly in accounting instructional programs. On-line access to account balances, credit information, etc. affords a realistic counterpart to many financial and management workplaces today.

The problem of sex stereotyping of occupations is acute in business offices where approximately 1% of the secretarial/clerical workforce is made up of males. Even many females are now seeking jobs elsewhere on the assumption that such jobs are career dead ends. The influence of the feminist movement has thus contributed to lowered enrollments in business and office occupations programs.

Basic skills is another area of great interest. Basic English and communications have remained high on the list of job qualifications for all fields and levels of business employment. Business math is stressed to varying degrees, but skills in use of electronic calculators are becoming increasingly important. Joining these skills, finally, are those related to the use of computer hardware and software. As computer-based technologies become more standard features of business environments, these skills will become increasingly in demand.

SPECIALIZED MATERIALS SUPPLIERS

Commercial/Educational Sources

Many commercial concerns (IBM, Smith-Corona, etc.) and other business machine and office supply companies, plus training institutions, offer materials, demonstrations, technical assistance, etc.

Professional Associations

The National Business Education Association, Administrative Management Society, Word Processing Management Association, and others are likely sources of information and materials. (See listings in this section.)

Instructional Objectives Exchange (IOX)

Provides objectives, criterion-referenced test sets, basic skill tests, accompanying instructional support and supplementary resource aids. See California listing.

PROFESSIONAL AND SPECIAL INTEREST ORGANIZATIONS

AMS
Administrative Management Society
Administrators and others involved with business management. Assists education institutions in developing training programs and courses of study.
Maryland Road
Willow Grove, PA 19090
(215) 659-4300

BERF
Business Education Research Foundation
Operated by NABTE (see below) to promote business teacher education.
1914 Association Drive
Reston, VA 22091
(703) 860-8300

DPE
Delta Pi Upsilon
Professional fraternity of men and women in business education.
Gustavus Adolphus College
St. Peter, MN 56082
(507) 931-4184

DPMA
Data Processing Management Association
Directors, managers and supervisors of data processing installations; educators and others interested in data processing. Sponsors student organizations interested in data processing.
505 Busse Highway
Park Ridge, IL 60068
(312) 825-8124

FBLA-PBL
Future Business Leaders of America—Phi Beta Lambda
For high school students preparing for business and office careers, and for college men and women enrolled in business, office or teacher education programs.
P.O. Box 17417-Dulles
Washington, DC 20041
(703) 860-3334

ISBE
International Society for Business Education, U.S. Chapter
Teachers of business subjects in high schools and colleges. A division of National Business Education Association.
1914 Association Drive
Reston, VA 22091
(703) 860-8300

JA
Junior Achievement
Provides high school students practical business experiences by running small scale businesses.
550 Summer Street
Stamford, CT 06901
(203) 359-2970

NABTE
National Association for Business Teacher Education
Colleges and universities with business teacher education programs; to improve business teacher education. A division of National Business Education Association.
1914 Association Drive
Reston, VA 22091
(703) 860-8300

NASBE
National Association of Supervisors of Business Education
Supervisors of business and office education programs in public and private schools.
Evansville-Vandeburgh School Corporation
One S. E. Ninth Street
Evansville, IN 47708
(812) 426-5036

NBEA
National Business Education Association
Teachers and administrators in secondary and postsecondary schools who are concerned with business education.
1914 Association Drive
Reston, VA 22091
(703) 860-8300

OEA
Office Education Association
High school and postsecondary vocational office education students. Affiliations through state student organizations.
1120 Morse Road, Room 225
Columbus, OH 43229
(614) 888-5776

ERIC DESCRIPTORS

Accounting
Banking
Bookkeeping
Business
Business Administration Education
Business Communication
Business Correspondence
Business Education
Business Education Facilities
Business Education Teachers
Business English
Business Skills
Clerical Occupations
Commercial Education
Data Processing
Data Processing Occupations
Distributive Education
Economics Education
Filing
Marketing
Office Machines
Office Occupations
Office Occupations Education
Office Practice
Recordkeeping
Shorthand
Typewriting
Vocational Education

SELECTED REFERENCES

Business and Office Education: Review and Synthesis of the Research, Third Edition. National Center for Research in Vocational Education, Columbus, OH: The Ohio State University, 1981.

Business Education for the Future. *International Labour Review* 119 (1980): 115-127.

Business Education Index. St. Peter, MN: Delta Pi Upsilon, 1968 through 1980.

Business Education: Its Status, Its Potential, and Its Needs in the 1980s. *Business Education Forum* 35 (1980): 3-11.

Index to Research in Business and Office Education. New York: Gregg and Community College Division, McGraw-Hill, 1974.

New Office Technology and Employment. *International Labour Review* 119 (1980): 689-704.

Review and Synthesis of Research in Business and Office Occupations Education. The Center for Vocation and Technical Education, Columbus, OH: The Ohio State University, 1966.

The Automated Office. *VocEd* 54 (1979): 40-43.

The Office of the Future. New York: North Holland Publishing Company, 1979.

Topic Analysis for Vocational Teacher Education: Business and Office Occupations. Columbus, OH: Division of Vocational Education, Ohio Department of Education, 1978.

Vocational Instructional Materials for Business and Office Education Available from Federal Agencies. Washington, DC: Human Resources Management, 1980.

ERIC References (other than above):

ED 185 340
ED 208 538
ED 209 462
ED 211 848
ED 212 861
ED 212 869
ED 217 135

HEALTH OCCUPATIONS EDUCATION

CONTEMPORARY ISSUES

Health occupations education faces a variety of challenges in preparing students for a rapidly changing field. The major issues center around: technological advances and their impact on instruction; changes in the makeup of the health care delivery system; effective recruitment and placement of students; consumerism and new health concerns; and cost-effectiveness.

These issues will be discussed with particular emphasis on nursing and related occupations in the health care delivery field. While this will make the scope of discussion more manageable, the health occupations field is of course much broader, and constantly expanding, including: automatic data processing, clinical laboratory services, dietetic and nutritional services, environmental sanitation, and many more.

The technological revolution has affected health occupations education in many ways. Breakthroughs in life-sustaining technology—the portable kidney, the artificial heart, emergency cardiac care—are only one side of the change. Computer technology is also rapidly altering job definitions in many health care facilities. The computer is introducing innovations in such areas as:

1) patient record keeping
2) staffing and bed assignments
3) routine diagnostic tests
4) generating patient care plans
5) diagnosing and monitoring patients' conditions
6) diet plans and medication records

Thus, computer skills are becoming more and more a mandatory part of the health occupations curriculum.

Along with technology-induced innovations, there is greater awareness of social and psychological factors in health. The one seeking care is recognized as a **total person** functioning in a complex social setting. Preparation of health care personnel needs to balance this emphasis with continual upgrading of technological skills.

While hospitals continue to provide the dominant mode of health care delivery and the majority of jobs, the sites for employment are becoming more numerous and varied. These include nursing homes, private offices, ambulatory health care centers, patients' homes, schools, hospital supply companies, and more. Therefore, the range of skills required in the health occupations curriculum is vast. Setting standards for graduates of educational programs across educational institutions is very difficult, but progress is being made.

The meeting of manpower needs in the health care industry is a related challenge. New and existing programs need to be articulated with national and local health manpower needs. Training in highly transferable skills is a relevant concern. The personnel requirements of new technologies have to be scrutinized carefully as these technologies are introduced. Also, geographic distribution of health care personnel is a concern. Recruiting students for the positions of greatest need, such as acute and long term care facilities, should be a priority. Changes in employment opportunities for women have had a significant impact on recruitment, and this problem needs to be addressed.

Heightened awareness on the part of health care consumers has resulted in greater frequency of home and self care. There is more emphasis on **life-enhancing**, in addition to life-sustaining, aspects of health care. Preventive medicine, health promotion, exercise, nutrition, and avoidance of environmental and stress-related hazards, are elements of public concern. Others are aging, drug abuse, child abuse, biomedicine, environmental diseases, and the like.

Finally, lower government support for health occupations education combined with inflation present new challenges. Computer technology is helping to make student instruction more cost-effective. However, increased costs to students is reducing the potential pool of applicants. Computer-assisted instruction is used for tutorial, dialogue and simulation, as well as student evaluation. Additionally, the computer can be used for on-line access to a staggering amount of information on medicines, toxic substances, poisons, and other health care topics.

SPECIALIZED MATERIALS SUPPLIERS

Colleges of Nursing and Allied Health

Materials produced and disseminated from colleges such as at the University of Texas at El Paso. They have produced a compendium of simulation aids for nursing practice with transparency masters.

Commercial/Educational Sources

Sources in the private sector include: pharmaceutical suppliers, biomedical equipment manufacturers, medical publishers, hospitals, etc. Educational programs for staff development and continuing education are available.

Federal Agencies

Information and materials may be obtained from: Health Resources and Services Administration (U.S. Department of Health and Human Services, Maryland listing); and the U.S. Environmental Protection Agency (District of Columbia).

Professional Associations

National League for Nursing, American Nurses' Association, and others are sources of materials. (See list in this section.)

Voluntary Community Health Organizations

Health organizations such as the American Cancer Association, American Heart Association, American Red Cross, March of Dimes, United Way, as well as mental health organizations, provide materials. For example, emergency medical procedures information (e.g., CPR) is available from the American Red Cross.

PROFESSIONAL AND SPECIAL INTEREST ORGANIZATIONS

AAN
American Academy of Nursing
Nursing professionals; devoted to development of the nursing profession.
2420 Pershing Road
Kansas City, MO 64108
(816) 474-5720

AACN
American Association of Colleges of Nursing
Postsecondary schools with nursing programs; devoted to advancing professional training.
11 DuPont Circle, N.W., Suite 430
Washington, DC 20036
(202) 332-1917

AAMCH
American Association for Maternal and Child Health, Inc.
Professionals and lay persons. Information clearinghouse on pregnancy and child health.
P.O. Box 965
Los Altos, CA 94022

AAOHN
American Association of Occupational Health Nurses
Professional nurses employed in business and industry and others interested in occupational health.
575 Lexington Avenue
New York, NY 10022

ADDS
American Digestive Disease Society
Provides public information regarding health maintenance.
420 Lexington Avenue, Suite 1644
New York, NY 10017
(212) 687-3088

AHA
American Heart Association
Supports research, education and community service to reduce death and disability due to heart disease.
7320 Greenville Avenue
Dallas, TX 75231
(214) 750-5300

AHA
American Hospital Association
Dedicated to promoting better health services. Furnishes multi-media educational materials.
840 North Lake Shore Drive
Chicago, IL 60611
(312) 280-6000

ALF
American Liver Foundation
Disseminates public information related to liver diseases.
30 Sunrise Terrace
Cedar Grove, NJ 07009
(201) 857-2626

ALA
American Lung Association
Devoted to prevention and control of lung disease.
1740 Broadway
New York, NY 10019
(212) 245-8000

AMAA
American Medical Association Auxiliary
Supports an information clearinghouse on community projects related to health issues. Promotes health education and health careers.
535 North Dearborn Street
Chicago, IL 60610
(312) 751-6166

ANA
American Nurses' Association
Professional organization of registered nurses.
2420 Pershing Road
Kansas City, MO 64108
(816) 474-5720

APFRI
American Physical Fitness Research Institute
Clearinghouse for educational information in health and fitness. Publishes guides to free instructional materials.
824 Moraga Drive
Bel Air, CA 90049
(213) 476-6241

APHA
American Public Health Association
Professional organization for individuals interested or involved in public health; promotes personal and environmental health.
1015 15th Street, N.W.
Washington, DC 20005
(202) 789-5600

ASHA
American School Health Association
Scientific and professional information for school nurses, health educators, and other health personnel. Health problems of school-age children.
P.O. Box 708
1521 South Water Street
Kent, OH 44240
(216) 678-1601

ASAHP
American Society of Allied Health Professions
Allied health professionals, educators and practitioners; provides communication among allied health schools and organizations; promotes new programs.
National Center for Higher Education
One DuPont Circle, N.W., Suite 300
Washington, DC 20036
(202) 293-3422

ASHMED
American Society for Health Manpower Education
Personnel from allied health care institutions and allied health educators; to promote education of health care personnel; to provide information and evaluation of educational resources.
840 North Lake Shore Drive
Chicago, IL 60611

AF
Arthritis Foundation
Disseminates information on arthritis to lay public.
3400 Peachtree Road, N.E.
Atlanta, GA 30326
(404) 266-0795

AAHE
Association for the Advancement of Health
Health educators of all levels; promotes health education.
1900 Association Drive
Reston, VA 22091
(703) 476-3440

ASTDN
Association of State and Territorial Directors of Nursing
Serves as a channel for sharing methods, techniques and information regarding public health nursing.
State Director of Nursing
Minnesota Department of Health
717 Delaware Street, S.E.
Minneapolis, MN 55440
(612) 623-5000

CCH
Consumer Coalition for Health
Provides public education programs to inform and create interest in health care delivery.
P.O. Box 5008
Washington, DC 20004
(202) 638-5828

CHE
Coalition for Health and the Environment
Individuals in all fields concerned with health and the environment; to promote disease prevention and environmental health; conducts educational programs and acts as an information clearinghouse.
806 15th Street, N.W., Suite 450
Washington, DC 20005
(202) 737-5043

CMCHI
Center for Medical Consumers and Health Care Information
Provides public information regarding health maintenance.
237 Thompson Street
New York, NY 10012
(212) 674-7105

CSTDPHE
Conference of State and Territorial Directors of Public Health Education
Directors of public health education in state departments of health; to improve the level of public health education.
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Columbia, SC 29201
(803) 758-5555

EFA
Epilepsy Foundation of America
Makes available audio-visual and other educational materials on epilepsy.
4351 Garden City Drive
Landover, MD 20781
(301) 459-3700

FNHP
Federation of Nurses and Health Professionals
A division of the American Federation of Teachers. Advocacy for nurses and health professionals.
11 DuPont Circle, N.W.
Washington, DC 20036
(202) 797-4491

HEF
Health Education Foundation
Helps people make informed health-related decisions. Operates information bank.
600 New Hampshire Avenue, N.W.,
Suite 452
Washington, DC 20037
(202) 338-3501

HEMA
Health Education Media Association
Disseminates information regarding new developments in use of media in health education.
P.O. Box 771
Riverdale, GA 30274
(404) 997-0449

HOSA
Health Occupations Students of America
Students preparing for careers in the allied health fields.
1750 Pennsylvania Avenue
Suite 306
Washington, DC 20006
(202) 393-6757/6758

HSC
Health Sciences Consortium
Publishing cooperative of health institutions; publishes effective instructional materials at low cost.
200 Eastowne Drive, Suite 213
Chapel Hill, NC 27514
(919) 942-8731

HDRF
Heart Disease Research Foundation
Supplies available educational information on cardiovascular diseases.
50 Court Street
Brooklyn, NY 11201
(212) 649-9003

MHMC
Mental Health Materials Center
Professional workers in mental health and health education. Promotes effective use of selected educational materials. Evaluates materials and publishes guide.
30 East 29th Street
New York, NY 10016
(212) 889-5760

NACHC
National Association of Community Health Centers
Advocacy agency for health centers nationwide providing educational research and technical assistance.
1625 Eye Street, N.W.
Washington, DC 20006
(202) 833-9280

NAHCS
National Association of Health Career Schools
Vocational, Technical and junior colleges training allied health professionals; to promote health education and maintain its standards.
10118 Empyrean Way, No. 103
Century City, CA 90067
(213) 553-8626

NAPNES
National Association for Practical Nurse Education and Service
Consults with schools desiring to develop a practical vocational nursing program.
254 West 31st Street
New York, NY 10001
(212) 736-4540

NFLPN
National Federation of Licensed Practical Nurses
Federation of state associations of licensed practical and vocational nurses. Acts as a clearinghouse of information on practical nursing.
P.O. Box 11038
214 South Driver Street
Durham, NC 27703
(919) 596-9609

NHC
National Health Council
Voluntary and professional societies, federal government agencies, other organizations and business groups. Distributes printed material on health and related subjects.
70 West 40th Street
New York, NY 10018
(212) 869-8100

NKF
National Kidney Foundation
Supports public education related to kidney disorders.
Two Park Avenue
New York, NY 10016
(212) 889-2210

NLN
National League for Nursing
Individuals and leaders in nursing and other health professions plus agencies and institutions. Many services related to nursing education.
Two Columbus Circle
New York, NY 10019
(212) 582-1022

NLPNEF
National Licensed Practical Nurses Educational Foundation
Devoted to upgrading education and practice of licensed practical nursing.
P.O. Box 11038
Durham, NC 27703
(919) 596-9609

NSNA
National Student Nurses' Association
Students preparing to be registered nurses. Contributes to career development of nursing students.
Ten Columbus Circle
New York, NY 10019
(212) 581-2211

NEA
Nutrition Education Association
Health professionals and other interested persons; promotes nutrition education for better health.
P.O Box 20301
3647 Glen Haven
Houston, TX 77025
(713) 665-2946

SOPHE
Society for Public Health Education
Professional workers in public health; devoted to improving public health education.
703 Market, Suite 535
San Francisco, CA 94103
(415) 546-7511

SSDHPER
Society of State Directors of Health, Physical Education and Recreation
State directors, supervisors and coordinators of health, physical education, and recreation in state departments of education. To promote sound school programs in these areas.
9805 Hillridge Drive
Kensington, MD 20895
(301) 949-2226

ERIC DESCRIPTORS

Allied Health Occupations
Allied Health Occupations Education
Allied Health Personnel
Allied Health Professions
Allied Medical Occupations
Attendants
Clinical Experience
Education
Health
Health Education
Health Facilities
Health Occupations
Health Occupations Education (Vocational)
Health Personnel
Health Related Professions
Health Services
Medical Associations
Medical Education
Medicine
Optometry
Paraprofessional Personnel
Physical Therapy
Professional Education
Professional Occupations
Teaching Hospitals
Technical Education
Technical Occupations
Therapy
Vocational Education

SELECTED REFERENCES

An Annotated Bibliography for Health Occupations. A Guide for Teachers and Students. Springfield, IL: Professional and Curriculum Development Unit for Vocational and Technical Education, 1975. ED 113 509

Computer Assisted Nursing Care. *American Journal of Nursing*. July, 1982, 1076-1079.

Continuing Education in the Health Professions. A Review of the Literature: 1960-1970. Syracuse, NY: Syracuse University, ERIC Clearinghouse on Adult Education, 1973. ED 095 340

Curriculum Materials for Health Occupations Education. Annotated Listing of Materials Available from Public Education Agencies. Washington, DC: U.S.O.E., 1971. ED 057 271

Curriculums for Allied Health Generalists. Huntsville, AL: University of Alabama, Graduate School, 1977. ED 101 362

Health Care Delivery in the United States. New York: Springer, 1977.

Health Careers Information Systems. *Journal of Allied Health*, 1975, 4, 31-32.

Health Manpower: An Annotated Bibliography. Chicago, IL: American Hospital Association, 1971. ED 079 534

Health Occupations Education: A Review of the Literature: Information Series No. 216, ERIC Clearinghouse on Adult, Career, and Vocational Education. Columbus, OH: The Ohio State University, National Center for Research in Vocational Education, 1980. ED 193 536

Health Occupations Curriculum Development: In Search of a More Powerful Curriculum. Greeley, CO: Rocky Mountain Educational Lab., Inc., 1969. ED 034 877

Health Occupations Education Curriculum. 1983 ERIC Update. Report No. BB63. Columbus, OH: The National Center for Research in Vocational Education, 1983.

Health Occupations Education — Instructional Materials. Columbus, OH: The Ohio State University, The National Center for Research in Vocational Education, 1972. ED 062 575

Health Occupations Students of America: A Plan of Action. Portland, OR: State Department of Education, 1979.

Health Occupations Teacher Education Planning. Summary of Funding, Conclusions, and Recommendations. Madison, WI: University of Wisconsin, Center for Studies in Vocational and Technical Education, 1975 ED 141 599

Identification and Analysis of the Current Issues in Health Occupations Education. Ph.D. dissertation, Columbus, OH: The Ohio State University, 1973.

Nurses Today — A Statistical Portrait. *American Journal of Nursing*. March, 1982, 448-451.

Review and Analysis of Curricula for Occupations in Health. Columbus, OH: The Ohio State University, The National Center for Research in Vocational Education, 1970. ED 044 507

Review and Synthesis of Research in Health Occupations Education. Columbus, OH: The Ohio State University, The National Center for Research in Vocational Education, 1969. ED 029 982

The Allied Health Professions: The Problems and Potentials of Maturity. *Journal of Allied Health.* 1977, 6, 25-33.

The Computer and "Futuring" in Health Occupations Education. *Occupational and Continuing Education Newsletter.* 1982, 3, 24-25.

The Development of Job-Related Curricula Using Task Analysis. Allied Health Professions Project. Pittsburgh, PA: Educational Projects, 1973 ED 093 887

The Health Care Dilemma. Second Edition. Boston, MA: Holbrock Press, 1976.

The Impact of Technology on Patients, Providers, and Care Patterns. *Nursing Outlook.* 1980, 28, 666-672.

The World of Health Occupations: A Two-Year Cooperative Program. New Brunswick, NJ: Rutgers, the State University, Curriculum Lab, 1975. ED 112 215

Vocational Instructional Materials for Allied Health Education. Available from Federal Agencies. Washington, DC: Human Resources Management, Inc., 1980.

Vocational Instructional Materials for Health Occupations Education. Available from Federal Agencies. Portland, OR, 1971. ED 058 445

ERIC References (other than above):

ED 137 220
ED 149 184
ED 179 900
ED 181 222
ED 185 904
ED 189 911
ED 189 913
ED 205 694
ED 206 103
ED 208 236
ED 208 237
ED 209 464
ED 209 522
ED 211 714
ED 212 835
ED 212 862
ED 216 100
ED 216 727
ED 217 133
ED 219 156
ED 219 577

HOME ECONOMICS EDUCATION

CONTEMPORARY ISSUES

In 1975, the American Home Economics Association's statement of priorities for the profession included points on "futuristic thinking and planning," and " creative adaptation to uncertainty and change." This statement is even more applicable today. It reflects concern over the social, political and economic changes bombarding family life today. It also shows the confidence of the profession as uniquely positioned to deal with these concerns.

Home economics is an interdisciplinary field with an **integrative mission**: to apply specialized subject areas toward solutions of the problems of home and family. The new challenges facing home economics are essentially due to changes in the scope and complexity of problems confronting families today. These changes have altered the profession's sense of its mission by broadening the concept of what the problems of families are.

Some of the new challenges are: care and services for the young, elderly, and handicapped; single parent homes; working mothers and childcare; promotion of family research, and other public policy issues; upgrading the decision making skills of homemakers; consumer protection; homemakers' reentry into the work force; changes in sex-roles and overcoming gender bias; energy conservation; the ethic of consumption versus the ethic of production and conservation; and many others.

This diversity, combined with the explosion of technical knowledge, has aroused several interrelated concerns regarding home economics curricula and programs: 1) the definition of the profession; 2) the fit between students' career goals and the curriculum; and 3) the discrepancy between the profession and its public image.

These three concerns are closely related. Home economics education continues to stress core concepts of resource management, improvement of home life, development of identity in the family, etc. At the same time, it must be responsive to new and emerging occupations. For example, many students are interested primarily in specialized programs in clothing, textiles and merchandising as contrasted with traditional family economics/home management. The issue is whether newer programs, only distantly tied to traditional home economics, should be called by the same name. Here is where the professional identity concern relates to the emergence of new occupations. A related factor is the sheer amount of relevant technical knowledge which makes it more difficult for home economists to carry out their integrative mission.

Finally, home economists have to deal with a public stereotype of their field that is confined primarily to the skills of food preparation and clothing construction. According to this image, home economics is for women almost exclusively. Thus, overcoming sex bias and attracting male home economics students is of concern to many.

Within the profession, the discussion of these issues is carried on vigorously. Many points of view are expressed. Common to all is an awareness of great potential and opportunity.

Social change has made home economics an even more strategic discipline than in the past. For example, homemaking functions are being recognized as increasingly cognitive and complex. In our complex technological society, these skills can no longer be passed down from one generation to the next. A new priority, therefore, may be to improve household decision makers' skills to cope with unprecedented demands upon them.

SPECIALIZED MATERIALS SUPPLIERS

Commercial/Educational Sources

A variety of sources of educational materials are found in the private sector. Many large department stores, food and textile concerns, various manufacturers, and utilities companies have educational divisions. They make available many types of instructional materials, demonstrations of equipment, and consultation on matters such as energy conservation, planning kitchen units, etc.

Cooperative Extension

Provides educational programs and support networks to deal with problems in the home economics field, e.g., consumer education, interior design, textiles, nutrition and health, and many other concerns. Educational materials and expert assistance are available. (See state listings.)

Federal Agencies

Information and materials may be obtained from: The Food and Nutrition Information and Education Resources Center (see National Agricultural Library, Maryland listing); and the Office of Human Development Services (U. S. Department of Health and Human Services, DC).

Home Economics Instructional Materials Center

This center, located in Texas (see state listing), provides instructional materials including instructor's guides, student materials, and courses of study in consumer and homemaking education and occupational home economics. Available out of state.

PROFESSIONAL AND SPECIAL INTEREST ORGANIZATIONS

AHEA
American Home Economics Association
Professional organization of home economists; to improve quality of individual and family life.
2010 Massachusetts Avenue, N.W.
Washington, DC 20036
(202) 862-8300

FHA
Future Homemakers of America
For students of home economics through 12th grade. Focus on homemaking, family life and consumer education, coupled with career preparation.
2010 Massachusetts Avenue, N.W.
Washington, DC 20036
(202) 833-1925

HEEA
Home Economics Education Association
Teachers and supervisors of home economics education; to promote effective home economics education.
1201 16th Street, N.W.
Washington, DC 20036
(202) 833-4138

HEIB
Home Economics in Business
A section of AHEA which provides information related to consumer interests and marketing.
301 Maple Avenue, W.
Vienna, VA 22180
(703) 938-3666

HERO
Home Economics Related Occupations
A chapter of FHA, stressing job and career preparation.
2010 Massachusetts Avenue, N.W.
Washington, DC 20036
(202) 833-1925

NAEHE
National Association of Extension Home Economists
Conducts out-of-school educational programs; helps individuals and families with problems of family life.
Box 169
Miller, SC 57362

NASSVHE
National Association of State Supervisors of Vocational Home Economics
Supervisors of home economics in each state; to strengthen and improve home economics education.
State Department of Education
State Office Building
1900 Washington Street, E.
Charleston, WV 25305

NAVHET
National Association of Vocational Home Economics Teachers
Professional society of home economics teachers who are members of the American Vocational Association.
Box 36
Park City, KY 42160
(502) 749-3131

NEHC
National Extension Homemakers Council
Educational organization assisting in solving family and community problems.
Route 2, Box 3070
Vale, OR 97918
(503) 473-2619

NEA
Nutrition Education Association
Health professionals and other interested persons; promotes nutrition education for better health.
P.O. Box 20301
3647 Glen Haven
Houston, TX 77025
(713) 665-2946

ON
Omicron Nu
Honor society for men and women in home economics.
1257 Haslett Road
Haslett, MI 48824
(517) 339-3324

PUO
Phi Upsilon Omicron
Honor society for men and women in home economics.
403 Bevis Hall
1080 Carmack Road
Columbus, OH 43210
(614) 421-7860

SNE
Society for Nutrition Education
Nutrition educators from home economics and other fields. Distributes informational materials and films.
1736 Franklin Street, 9th Floor
Oakland, CA 94612
(415) 444-7133

ERIC DESCRIPTORS

Child Care Occupations
Clothing Instruction
Consumer Economics
Consumer Education
Consumer Science
Cooking Instruction
Daily Living Skills
Day Care
Dietitians
Displaced Homemakers
Extension Agents
Family Environment
Family Life
Family Life Education
Family (Sociological Unit)
Family Structure
Food Service Occupations
Foods Instruction
Home Economics
Home Economics Education
Home Economics Skills
Home Economics Teachers
Homemakers
Homemaking Education
Homemaking Skills
Home Management
Household Workers
Housekeepers
Housing
Housing Management Aides
Laundry Drycleaning Occupations
Money Management
Needle Trades
Nutrition Instruction
Occupational Home Economics
Practical Arts
Sewing Instruction
Sex Stereotypes
Textiles Instruction
Visiting Homemakers

SELECTED REFERENCES

A conceptual Scheme and Decision—Roles for the Selection and Organization of Home Economics Curriculum Content. Madison, WI: Department of Public Instruction (in press), p. 75 of manuscript.

Competencies for Home Economics Teachers. Ames, IA: The Iowa State University Press, 1978.

Competency-Based Professional Education in Home Economics: Selected Competencies and Criteria. Washington, DC: American Home Economics Association, 1974. (ED 109 480)

Concepts and Generalizations: Their Place in High School Home Economics Curriculum Development 1967. Developed from a series of conferences sponsored by the United States Department of Education and published by the American Home Economics Association.

Curriculum Development in Occupational Home Economics: An AHEA/OE Project. *Journal of Home Economics.* 70 (March, 1978): 39-41. (EJ 180 843)

Future Homemakers of America Planning Paper for Consumer and Homemaking Education. Washington, DC: Future Homemakers of America, 1977.

Home Economics: A Definition. American Home Economics Association, Washington, DC, 1979.

Home Economics as a Profession. Second Ed., New York: McGraw-Hill, 1973.

Home Economics Education: A Review and Synthesis of the Research. Information Analysis Series No. 185, The National Center for Research in Vocational Education, Columbus, OH: The Ohio State University, 1979.

Home Economics Instruction in the Secondary Schools. Washington, DC: Center for Applied Research in Education, 1964.

Home Economics: New Directions. A Statement of Philosophy and Objectives. Washington, DC: American Home Economics Association, 1959.

Home Economics: New Directions II. Washington, DC: American Home Economics Association, 1974.

Home Economics: Past, Present and Future. Boston, MA: Allyn and Bacon, Inc., 1980.

Inservice Needs of Home Economics Teachers. *Journal of Vocational Education Research.* 2 (Summer, 1977): 49-57.

Instruments of Assessing Selected Professional Competencies for Home Economics Teachers by Home Economics Teacher Educators. Ames, IA: The Iowa State University Press, 1978.

Professional Identity of Home Economics: A Socialization Process. Ph.D. dissertation, University Park, PA: The Pennsylvania State University, 1976.

Review and Synthesis of Research in Home Economics Education. Columbus: The Center for Research and Leadership Development in Vocational and Technical Education, The Ohio State University, 1966.

Review and Synthesis of Research on Consumer and Homemaking Education. Information Series No. 33. Columbus: ERIC Clearinghouse on Vocational and Technical Education, The Center for Vocational and Technical Education, The Ohio State University, 1971. (ED 048 482)

Review and Synthesis of Research on Home Economics Education Columbus: Research Series No. 57. ERIC Clearinghouse on Vocational and Technical Education, The Ohio State University, 1970. (ED 038 519)

Vocational Home Economics Education: A Statement by the Vocational Education Coalition. *Journal of Home Economics,* Winter 1979, 12-16.

Vocational Instructional Materials for Vocational Home Economics Education. Human Resources Management, Inc., Washington, DC, 1980.

ERIC References (other than above):

ED 159 372
ED 159 373
ED 190 911
ED 205 750
ED 205 752
ED 205 753
ED 205 754
ED 205 755
ED 205 756
ED 205 809
ED 211 724
ED 212 863
ED 216 240
ED 216 241

INDUSTRIAL ARTS EDUCATION

CONTEMPORARY ISSUES

Current overviews of industrial arts education show evidence of an active evolutionary change. There is more evidence than ever before of self-appraisal of its fundamental beliefs and practices.

The ongoing concerns of industrial arts educators regarding their profession and its affairs may be grouped as follows:

1) impact of industrial arts on human resources;
2) evaluation of programs;
3) curriculum development and implementation;
4) teaching/learning processes.

The role of industrial arts education in the human resource delivery system is a longstanding interest. The philosophical viewpoint of many leaders in the field includes the notion that the industrial and other practical arts play a vital role in **technological literacy** and **industrial understanding.** Thus, industrial arts augments and upgrades the nation's skilled manpower pool and contributes to leisure and avocational interests, citizenship, attitudes affecting employment, consumer skills, career education, and basic skills acquisitions. However, there is a lack of documentation of impact in most of these outcome areas. Additionally, there is the simple need for more follow-up information on graduates—how, where, and with what success they enter the human resource delivery system. The relationship between program output and industry's demands is not well understood.

Closely related is the need for more sensitive, and comprehensive, evaluations of industrial arts programs. The trends toward program accountability and improved program evaluation methodology have addressed this issue. However, a nationwide review of the research reveals that the critical mass of evaluations needed is still lacking. Thus, a comprehensive synthesis cannot be made of outcomes reliably associated with industrial arts programs. As mentioned above, professionals are particularly interested in the impact on the nation's bank of human resource capital. But, for many crucial outcomes, the necessary instrumentation still awaits development. Other needs are for: more longitudinal follow-up evaluations, more documentation of impacts on learning processes, and building up a national data base of program information. Yearbooks of the American Council of Industrial Arts Teacher Educators have helped document the profession's view of its current status.

In terms of curriculum development, there has been a great deal of work in developing competency-based packages, units and systems. A systematic curriculum process, utilizing teachers in development, is especially noteworthy in the **Industrial Arts Curriculum Project.** However, two concerns which stand out are these:

1) despite the amount of activity, gaps as well as some duplication of effort exists;
2) more attention needs to be paid to the implementation process. In the latter case, building public support as an integral part of curriculum development seems indicated.

Learning processes in industrial arts represents an important, but largely uncharted, field of study. What appears needed is a comprehensive framework, identifying key variables. This would allow more systematic exploration of such key topics as: organizational patterns, psychomotor behavior, special needs, the role of equipment and facilities in learning, etc. Understanding the long range impact of the curriculum, particularly on technological literacy, is a keenly felt need. The role of instructional technology in teaching/learning needs expansion and more study, e.g. the uses of audiovisual tutorial methods for equipment intensive subjects.

Industrial arts educators' desire to document the unique contributions of their profession is related to their sense of professional identity. More vocational research and development, it is widely felt, is needed to distinguish the effects of industrial arts education from vocational education, particularly before occupational selections are made.

SPECIALIZED MATERIALS SUPPLIERS

American Asociation for Vocational Instructional Materials (AAVIM)

Provides resource material including manuals, teacher guides, student workbooks, audiovisual aids, transparency masters, and slide sets. See Georgia listing.

Instructional Objectives Exchange (IOX)

Provides objectives, criterion-referenced test sets, basic skill tests, accompanying instructional support and supplementary resource aids. See California listing.

Professional Associations

American Industrial Arts Association, American Council on Industrial Arts Teacher Education, National Association of Industrial and Technical Teacher Educators, and others are likely sources of information and materials. (See listings in this section.)

PROFESSIONAL AND SPECIAL INTEREST ORGANIZATIONS

AIAA

American Industrial Arts Association

Industrial arts teachers and supervisors in elementary, secondary and post-secondary schools.

1914 Association Drive
Reston, VA 22091
(703) 860-2100

AIASA

American Industrial Arts Student Association

Elementary and secondary students of industrial arts; to promote career and educational advancement.

1201 16th Street, N.W.
Washington, DC 20036
(202) 833-4216

ACIASAO

American Council of Industrial Arts State Association Officers

Industrial arts educators who represent state associations. Clearinghouse for gathering of ideas and information.

University of Wisconsin
Menomonie, WI 54751
(715) 232-1384

ACIAS

American Council of Industrial Arts Supervisors

Industrial arts supervisors from U. S. Department of Education, state departments of education, and local schools; provides guidance for preparing educational programs for secondary industrial arts.

Industrial Arts Education
P. O. Box 6Q
Richmond, VA 23216
(804) 225-2089

ACIATE

American Council on Industrial Arts Teacher Education

College teachers and others engaged in industrial arts teacher education.

Division of Technology
Arizona State University
Tempe, AZ 85281
(602) 965-3214

NCLA
National Council of Local Administrators of Vocational Education and Practical Arts
Administrators and supervisors of practical arts; members of American Vocational Association.
Trade and Technical Education
Board of Education
City of New York
66 Rugby Road
Brooklyn, NY 11226
(212) 282-3269

NAITTE
National Association of Industrial and Technical Teacher Educators
Professional society of teacher educators in industrial arts and other fields.
Department of Practical Arts and Vocational Technical Education
University of Missouri-Columbia
Columbia, MO 65211
(314) 882-3082

ERIC DESCRIPTORS

Auto Mechanics
Building Trades
Cabinetmaking
Ceramics
Construction (Process)
Drafting
Electronics
Foundries
Glass
Graphic Arts
Industrial Arts Teachers
Industrial Education
Industry
Laboratory Technology
Leather
Manufacturing
Metal Working
Painting
Plastics
Power Technology
Practical Arts
Printing
School Shops
Shop Curriculum
Trade and Industrial Education
Vocational Education
Woodworking

SELECTED REFERENCES

A Guide to the Planning of Industrial Arts Facilities. Washington, DC: ACIATE/AIAA, 1975.

A Historical Perspective of Industry. Washington, DC: ACIATE/AIAA, 1968.

A National Assessment of the Problems and Information Needs of Curriculum Developers in Industrial Education. Ph.D. dissertation. Columbus, OH: The Ohio State University, 1974.

A Rationale for Industrial Arts Teacher Education in Power and Energy Technology. *Man/Society/Technology.* 38 (January, 1979): 9-12.

Building a Partnership. Proceedings of Man/Society/Technology Forum Series. Washington, DC: AIAA., 1972.

Come Monday Morning. Washington, DC: AIAA, 1978.

Components of Teacher Education. Washington, DC: ACIATE/AIAA, 1971.

Conference Proceedings. (Compiled and issued annually under separate titles.) Washington, DC: AIAA., annually.

Funding I.A. Programs: at the State Level. *Man/Society/Technology.* 35 (March, 1976): 171-172. EJ 135 600

Future Alternatives for Industrial Arts. Washington, DC: ACIATE/AIAA, 1976.

Guidance in Industrial Arts for the '70's. Washington, DC: American Industrial Arts Association, 1971.

Guidelines for Industrial Education Programs in Elementary and Secondary Schools, Regional Occupational Centers, and Regional Occupational Programs. Revised. ED 206 826

How the Decline in Productivity Effects (sic) Industrial Arts. *Man/Society/-Technology.* 37 (1978): 6-8

How Well Are We Doing Our Job? *Industrial Education.* 66 (October, 1977): 10. EJ 169 19

Industrial Arts for Disadvantaged Youth. Washington, DC: ACIATE/AIAA, 1970.

Industrial Arts for the Early Adolescent. Washington, DC: ACIATE/AIAA, 1972.

Industrial Arts in Senior High Schools. Washington, DC: ACIATE/AIAA, 1973.

Industrial Arts in the Open Access Curriculum. Bloomington, IL: McKnight Publishing Company, 1978.

Model of a Theoretical Base for Industrial Arts Education. Washington, DC: American Industrial Arts Association, 1977.

Research in Industrial Education: Retrieval of Data from Information Systems. Washington, DC, 1976.

Review and Synthesis of Research in Industrial Arts Education. Columbus, OH: Center for Research and Leadership Development in Vocational Technical Education, 1966. ED 01 564

Review and Synthesis of Research in Industrial Arts Education. Research Series No. 42. Columbus: The Ohio State University. The National Center for Research in Vocational Education, 1969. ED 034 898

State Association Leadership. Presentation at the AIAA Annual Conference, Atlanta, GA, 1978.

Summaries of Studies in Industrial Arts, Trade and Industrial, and Technical Education: Dissertation Abstracts. Greeley, CO: University of Northern Colorado, annually.

Summaries of Studies in Industrial Arts, Trade and Industrial, and Technical Education. *Journal of Industrial Teacher Education.* 11 (Fall, 1973): 92-95.

The Future of Industrial Arts—A Widened Horizon. *Man/Society/-Technology.* 39. (1978): 22-23.

The Year 2000 . . . and Industrial Arts. *Man/Society/Technology.* 39 (1980): 18-19.

What to Do about Technology: The Industrial Arts Educator's Responsibility. *The Journal of Epsilon Pi Tau.* 5 (1979): 29-32.

ERIC References (other than above):

ED 208 138
ED 210 434
ED 210 477
ED 212 864
ED 215 095

MARKETING AND DISTRIBUTIVE EDUCATION

CONTEMPORARY ISSUES

The issues in marketing and distributive education center around such areas as: the changing nature of job placement, productivity, and alternative models for instruction and curriculum development.

There is no question that our economy has shifted toward service-oriented occupations, and away from manufacturing and heavy industry. This trend is evident in the types of jobs having greatest placement potential for graduates of distributive education programs. Many new jobs involve meeting industries' needs for financial and credit services, management, equipment procurement and leasing. A partial listing of these jobs includes: commodity/loan agent, claim examiner, foreign exchange clerk, management trainee, inventory/control clerk, travel agent, service department manager, etc.

These **new and emerging occupations** clash to some degree with traditional marketing and distributive education job trainee placements. Traditionally, placements have fallen within the areas of apparel and accessories, food distribution, and general merchandising. Whether these placements have been dictated in the past by convenience is unclear. However, large scale changes in our economy apparently must challenge current practices to insure the most vocationally competent graduates.

Concerns regarding our nation's productivity have affected marketing and distributive education. The pressures of inflation, government regulation, taxes, and energy costs, have contributed to a decline in American business productivity. However, there is also an undercurrent of feeling that some of the responsibility relates to leadership and entrepreneurship in both business and marketing. Managerial philosophy which stresses short run profit is being challenged by a new emphasis on innovation, investment, and leadership. Creating value where none existed before is a new priority, according to some; not just detached market analysis.

Surveys of leaders in marketing and distributive education have shown remarkable consistency and stability in their educational philosophies. While the goal continues to be vocationally competent students, the specifics of instruction and curriculum development bring out areas of considerable discussion.

Some of the topics in current research on marketing and distributive education instruction suggest several dominant interests. There is considerable continuing interest in various aspects of the **IDECC** (Interstate Distributive Education Curriculum Consortium) system, particularly the IDECC LAPs (Learning Activity Packets) and the conditions in which they are most effective. The cooperative method of instruction continues to be stressed, with emphasis on identifying components which appear most important, such as: the use of training plans, relating on-the-job training and classroom instruction, the need for identifying students' occupational interests, etc. Finally, the national student organization **DECA** (Distributive Education Clubs of America) has received much attention as an integral part of marketing and distributive education programs.

In view of rapid changes in marketing and distributive occupations, the task of comprehensive curriculum research and development is a priority. There is evidence of a consistent conceptual basis underlying these efforts. However, there is also need to avoid duplication of effort and concentration of activity in selected occupational areas.

Finally, new technology is already having its impact on the types of skills needed in the workplace. A few of the common features showing high technology include: sales transaction recording, point-of-sale credit checks and terminal information bands, lite pens, etc. Future clerical and retail positions, and other support services, are likely to require a working knowledge of computer software, at least at an elementary level. These developments will also profoundly affect instruction and curriculum development.

SPECIALIZED MATERIALS SUPPLIERS

Commercial/Education Sources

A variety of educational materials are available in the private sector, e.g., real estate, advertising services, department stores, apparel and fashion merchandisers, etc. Materials and expert assistance are provided.

Interstate Distributive Education Curriculum Consortium (IDECC)

IDECC is a non-profit corporation which provides a competency-based learning system for its member states. Learning Activity Packages (LAPS) and Learning Manager Guides are available for over 100 occupations in distributive education. Consult Ohio listing.

Vocational Instructional Materials Laboratory

This curriculum lab provides task lists, task analyses, a subscription service in distributive education, and other services. Consult Ohio listing.

PROFESSIONAL AND SPECIAL INTEREST ORGANIZATIONS

CDTE
Council for Distributive Teacher Education
See **MDEA.**

DECA
Distributive Education Clubs of America
High school and junior college students interested in marketing and distribution.
1908 Association Drive
Reston, VA 22091
(703) 860-5000

MDEA
Marketing and Distributive Education Association
A professional association for instructors, teacher-coordinators, local and state supervisors, teacher educators, and other personnel responsible for maintaining, improving, and supporting marketing and distributive education programs. Former organizations CDTE, NADET, NASSDE, and NADELS combined to form MDEA.
1908 Association Drive
Reston, VA 22091
(703) 476-4299

NADELS
National Association of Distributive Education Local Supervisors
See **MDEA.**

NADET
National Association of Distributive Education Teachers
See **MDEA.**

NASSDE
National Association of State Supervisors of Distributive Education
See **MDEA.**

ERIC DESCRIPTORS

Agribusiness
Business Education
Communications
Cooperative Education

Distributive Education
Distributive Education Teachers
Employment Opportunities
Food Service Occupations
Human Resources
Insurance Occupations
Marketing
Merchandising
Real Estate Occupations
Retailing
Salesmanship
Sales Occupations
Transportation
Utilities
Wholesaling

SELECTED REFERENCES

A Philosophy of Distributive Education. Blacksburg, VA: Virginia Polytechnic Institute and State University. ED 019 412

Development of a Data Base for Curriculum Development in Distribution and Marketing. Richardson, TX: EPD Consortium D., 1976.

Distributive Education Curriculum, Methods, and Materials Project. Whitewater, WI: University of Wisconsin, 1979.

Evaluative Criteria and Standards for Distributive Education on the Secondary Level. DeKalb, IL: Northern Illinois University, 1978.

Implementation of Vocational Education in Distribution. Report of a USOE Clinic. Minneapolis: University of Minnesota, School of Education, 1978.

Marketing and Distributive Education Curriculum. 1983 ERIC Update. Series No. BB 61. Columbus, OH: The National Center for Research in Vocational Education, 1983.

Marketing and Distributive Education: Review and Synthesis of the Research, 1969-1978, 3rd Edition. Information Series No. 213. ERIC Clearinghouse on Adult, Career, and Vocational Education. Columbus, OH. The Ohio State University, 1980.

NASSDE 1978 Survey of State Supervision Structure for Distributive Education. Indianapolis, IN: National Association of State Supervisors of Distributive Education, 1978.

Review and Synthesis of Research in Distributive Education. The Center for Research and Leadership Development in Vocational and Technical Education. Columbus, OH: The Ohio State University, 1966.

Review and Synthesis of Research on Distributive Education. Second edition. ERIC Clearinghouse on Adult, Career, and Vocational Education. Columbus, OH: The Ohio State University, 1970.

The Distributive Education Program. Washington, DC: U. S. Office of Education, 1978. ED 160 827

Topic Analysis for Vocational Teacher Education. Distributive Education and Occupational Work Adjustment. Columbus, OH: Division of Vocational Education, Ohio Department of Education, 1978.

Vocational Instructional Materials for Marketing and Distributive Education. Available from federal agencies. Washington, DC: Human Resources Management, Inc., 1980.

ERIC References (other than above):

ED 205 693
ED 208 235
ED 209 463
ED 212 812
ED 212 865
ED 218 481
ED 218 482

TECHNICAL EDUCATION

CONTEMPORARY ISSUES

Technical educators' concerns are substantially due to the rate of technological change and the need to prepare for high technology. Even entry level jobs are affected as educators seek to prepare young people for new and emerging occupations.

Among the major concerns are:

1) providing adequate supplies of trained workers;
2) curriculum planning;
3) techniques of instruction;
4) basic skills and computer literacy;
5) public understanding of science and technology.

There exists a **critical need** for technicians, not only in engineering and electronics, but in health, business, agriculture and so forth. The need for technicians to repair, operate and maintain biomedical equipment is one example. Energy-related occupational technologies—laser-optics, solar geothermal conservation—are examples of areas of need. Recruiting and retraining qualified instructors is a related area of need.

The worker demand problem is connected with several related issues: maintaining adequate support for programs, keeping programs and equipment up to date, attracting students with prerequisite skills, removing career barriers for women and minorities, providing incentives for graduates' job mobility, and reducing program attrition.

However, the key problem appears to be **forecasting** new job requirements and planning curricula to meet them. Coordination of job information banks, operated by the Labor Department, is of course carried out by the National Occupational Information Coordinating Committee **(NOICC)** and the State Occupational Information Coordinating Committees **(SOICC's)**. But current labor market information provides only a limited basis for forecasting job needs tied to emerging technologies. There is a need for cooperation in planning among training institutions, industry and other agencies, both public and private. There is increasing evidence of communication and idea sharing through key journals, yearbooks, national conference reports, newsletters, etc.

Curriculum planning and change have been affected by the knowledge explosion and the rise of technology primarily. Systems analysis and the concept of accountability are two other ideas which have changed the face of curriculum development in technical education. Task analysis is a tested and useful tool in identifying components of technical education curricula. Developing and supplying task inventories of technical occupations through large data banks of research agencies and other organizations is a growing industry. These may be used for many curriculum development activities. The state-of-the-art in curriculum development offers little forecasting power, however.

Technical education instruction faces challenges paralleling those discussed above. High enrollment programs may be particularly hard pressed to maintain adequate funding and purchase standard industrial equipment. One solution may be using simulation techniques with less than industrial-level equipment. Cost-effective ways to produce skills, which are transferable to industry, should be explored. Individualized and computer-assisted instruction also offer promise. More needs to be done to develop these alternatives.

The back-to-the-basics movement will continue to influence technical education. Entry level electronics jobs, for example, require basic mathematical concepts as well as basic physics principles. Career advancement depends on building on a solid base of fundamental skills. In addition, since many jobs are service-oriented, skills in communication and human relations may not be neglected.

Public understanding of science and technology is not keeping pace with the demand for technological literacy in society at large. Technical educators have a pragmatic stake in public understanding: to recruit support for their programs. In addition, the impact of technology on daily life will demand more technological sophistication of large segments of the population.

SPECIALIZED MATERIALS SUPPLIERS

Commercial/Educational Sources

Major electronics firms, data processing and electronic testing equipment manufacturers, and others are likely sources of materials and services.

Federal Agencies

The following federal agencies supply technical information and materials: U. S. Department of Commerce (see District of Columbia), U. S. Department of Energy (see Tennessee), and the National Aeronautics and Space Administration (see District of Columbia).

National Technical Information Service (NTIS)

NTIS is the primary source for the public sale of Government-sponsored research, development and engineering reports. Thus it is a good source of information for technical subjects. Computer search services provide abstracts on a cost-recovery basis. See Virginia listing.

Professional Associations

The American Technical Education Association, American Vocational Association, National Association of Trade and Technical Schools, and others are likely sources of information and materials. (See listings in this section.)

Technical Education Research Center

Private, not-for-profit organization which develops and supplies curriculum materials and technical assistance related to high technology instruction, special needs populations, etc. (See listing in this section).

PROFESSIONAL AND SPECIAL INTEREST ORGANIZATIONS

ATEA

American Technical Education Association
Educators, teachers and industrial leaders concerned with technical education.
North Dakota State School of Science
Wahpeton, ND 58705
(701) 671-2240

CORD
Center for Occupational Research and Development
Formerly TERC-SW. See description for TERC.
601 Lake Air Drive
Waco, TX 76710
(817) 772-8756

NAITTE
National Association of Industrial and Technical Teacher Educators
Professional society of teacher educators in trade and industrial education and other fields.
Department of Practical Arts and
Vocational Technical Education
University of Missouri—Columbia
Columbia, MO 65211
(314) 882-3082

NATTS
National Association of Trade and Technical Schools
Private schools providing occupational training; federally recognized accrediting agency.
2021 K Street, N.W.
Washington, DC 20006
(202) 296-8892

TERC
Technical Education Research Center
Private, not-for-profit organization which develops and supplies curriculum materials and technical assistance related to high technology instruction, special needs populations, etc.
44 Brattle Street
Cambridge, MA 02138
(617) 547-0430

ERIC DESCRIPTORS

Aerospace Education
Agricultural Education
Allied Health Occupations
Allied Health Occupations Education
Architectural Education
Aviation Technology
Computer Science Education
Drafting
Electromechanical Technology
Engineering Education
Engineering Technology
Fire Science Education
Health Occupations
Horology
Industrial Education
Operating Engineering
Paraprofessional Personnel
Pretechnology Programs
Prevocational Education
School Shops
Science Education
Semiskilled Occupations
Skilled Occupations
Technical Institutes
Technical Instruction
Technical Mathematics
Technical Occupations
Technology
Trade and Industrial Education
Two Year Colleges
Vocational Education
Vocational Education Teachers

SELECTED REFERENCES

A Review and Synthesis of Technical Education Research in Oklahoma. Stillwater: Oklahoma Vocational Research Coordinating Unit, 1970. ED 039 328

Criteria for Technician Education: A Suggested Guide. Washington, DC: Superintendent of Documents, U.S. Government Printing Office, 1968. ED 027 417

Curriculum Development Needs for Vocational Education: New and Changing Occupations. Columbus: National Center for Research in Vocational Education, The Ohio State University, 1980.

Employment Projections for Planning Vocational-Technical Education Curricula: Mission Impossible? Columbia: University of Missouri, College of Education, Department of Practical Arts Vocational-Technical Education, Office of Vocational Education Research, 1976. ED 136 014

Energy and Jobs for the Future. *VocEd* 55 (1980): 46-49.

Energy-Related Technology Programs in Community and Junior Colleges: An Analysis of Existing and Planned Programs. Oak Ridge, Tennessee: Oak Ridge Associated Universities' Manpower Development Division, 1976. ED 125 703

Review and Synthesis of Research in Technical Education. The Center for Vocational and Technical Education, The Ohio State University, 1966.

Review and Synthesis of Research and Development in Technical Education. Information Series No. 206. ERIC Clearinghouse on Adult, Career and Vocational Education, Columbus, OH: The Ohio State University. National Center for Research in Vocational Education, 1980.

Review and Synthesis of Research Concerning Adult Vocational and Technical Education. Columbus, OH: The National Center for Research in Vocational Education, 1972. ED 064 469

Summaries of Studies in Industrial Arts, Trade and Industrial and Technical Education: Dissertation Abstracts. Greeley, CO: University of Northern Colorado, annually.

Summaries of Studies in Industrial Arts, Trade and Industrial, and Technical Education. *Journal of Industrial Teacher Education.* 11 (Fall, 1973): 92-95.

Technical Education Yearbooks. Annually, 1963-.

Technician Education--Who Chooses It? New York, New York: Conference Board, Inc., 1972. ED 080 744

Technicians: Where Do We Stand? *VocEd* 54 (1979): 31-34.

Technology Change and Its Manpower Implications. A Comparative Study of the Chemical and Allied Products Industry in the U.K., U.S., and Japan. Middlesex, England: Chemical and Allied Products Industry Training Board, 1980.

Technology, Change, and Society. Worcester, MA: Davis Publications, 1978.

The Technical Institute. New York: The Center for Applied Research in Education, Inc., 1964.

The Technical Manpower Shortage: How Acute? Oak Brook, IL: National Industrial Conference Board, Inc., 1969.

U.S. Department of Labor, Bureau of Labor Statistics. *Industrial Technology Outlook Reports.* Washington, DC: U.S. Government Printing Office. (Annual).

Vocational Education for High Technology. 1983 ERIC Update Series No. BB68. The National Center for Research in Vocational Education. Columbus, OH: The Ohio State University, 1983.

Vocational Instructional Materials for Technical Education. Washington, DC. Available from federal agencies. 1980.

ERIC References (other than above):

ED 213 441
ED 216 168
ED 216 205
ED 216 721

TRADE AND INDUSTRIAL EDUCATION

CONTEMPORARY ISSUES

The major issues of trade and industrial education are all related to the impact of economic and technological changes on the demands for skilled workers in industry. The issues may be divided into the following areas:

1) impact of technology on manufacturing, construction, and other occupations;
2) curriculum planning and design;
3) employability and retraining;
4) basic skills.

From its earliest days T & I Education has stressed the orderly development of relevant occupational skills, technical knowledge, and attitudes for entry level employment and future job advancement in industry. The need to insure that skills and knowledge are transferable from one situation to another has always been present. What has changed recently, of course, is the **rate** of occupational change itself. The deployment of industrial robots in assembly line manufacturing processes, the modularization of product components, and other effects of advanced technology, have forced some areas of T & I toward reformulation of their programs and priorities. As we move into a society that emphasizes "information," the involvement of technicians in some areas is reduced, while a greater level of technological sophistication is required in others.

These trends have several obvious impacts on curriculum planning and design. One problem is the difficulty of forecasting new job requirements and planning curricula to meet them. Coordination of job information banks, through the National Occupational Information Coordination Committee **(NOICC)** does provide current labor market information. But this information provides only a limited basis for forecasting new job needs tied to emerging technology. Furthermore, the state-of-the-art in curriculum development provides an adequate means to respond to known jobs, but has little forecasting power itself. More cooperation is needed among training institutions, industry, trade and other associations, both public and private, to provide this type of information.

Another need in curriculum design is for a structural approach to identify meaningful job clusters and competencies which cut across different occupational domains. While this idea is not new, traditional curriculum organization persists without much regard for concepts and skills share across areas. This need is particularly acute given the emphasis on training for skills which are transferable from one situation to another and to avoid training for those which are likely to become obsolete.

Employability, and the willingness and capacity to be retrained, continue to be highly regarded attributes in T & I education and industry alike. Clearly this concept relates more to generic job finding and job survival skills than to particular skills required by a specific job. Employers frequently state that they are less concerned with the particular skills, and more with the job entrant's adaptability and proficiency in learning after being hired. Of course, this applies equally whether the job is the worker's first, or a new one requiring retraining. Employability also concerns job-related attitudes, the work ethic, loyalty, entrepreneurship, etc. While virtually everybody concedes that such characteristics are desirable, relatively little is known concerning how they are fostered, and the possible role of educational programs, and of student organizations such as **VICA** (Vocational Industrial Clubs of America), in promoting them.

Finally, basic academic skills have been stressed as an increasingly vital part of T & I education. These skills are of course part of employability. The growing academic thrust of vocational education reflects the increased necessity for basic language, mathematical, and communication skills in the emerging "information society."

SPECIALIZED MATERIALS SUPPLIERS

American Association for Vocational Instructional Materials (AAVIM)
Provides resource material including manuals, teacher guides, student workbooks, audiovisual aids, transparency masters, and slide sets. Consult Georgia state listing.

Commercial/Educational Sources
A variety of educational materials are available in the private sector, e.g., automobile manufacturers, building materials companies, cosmetics manufacturers, electrical and electronics manufacturers and suppliers, tool and die makers, and many more. Materials and expert assistance are provided.

Instructional Materials Laboratories
Curriculum labs such as those in Alabama, Connecticut, and Texas (see state listings) provides a variety of curriculum materials and services, e.g., performance-based instruction teacher manuals and student study guides, and audiovisual materials.

National AudioVisual Center
This clearinghouse makes available all federally-developed audiovisual materials for purchase or rental. In vocational education, most materials are in the following T&I areas: auto mechanics, carpentry, construction, drafting, electricity/electronics, photography, heating, air conditioning, refrigeration metal workings, welding, machine shops, benchwork, plumbing, pipe fitting, and safety. Consult DC listing.

PROFESSIONAL AND SPECIAL INTEREST ORGANIZATIONS

ASC
Associated Schools of Construction
Colleges and universities offering a program in construction; to promote construction education.
1140 N.W. 63rd Street
Oklahoma City, OK 73116
(405) 843-5531

NAITTE
National Association of Industrial and Technical Teacher Educators
Professional society of teacher educators in industrial arts and other fields.
Department of Vocational-Technical Education
417 Claxtion Addition
University of Tennessee
Knoxville, TN 37996

NAIT
National Association of Industrial Technology
Industrial organizations, educators, and others who are concerned with industrial technology education; promotes research related to the curricula of industrial technology.
P.O. Box 17074
Jacksonville, FL 32216
(904) 646-2683

NASSTIE
National Association of State Supervisors of Trade and Industrial Education
Supervisors and assistant supervisors of trade and industrial education; to promote trade and industrial education.
Industrial Education Specialist
KSDE 120 East Tenth
Topeka, KS 66612

NATIE
National Association for Trade and Industrial Education
Educators in trade and industrial education; promotes trade and industrial education.
P.O. Box 1665
Leesburg, VA 22075
(703) 777-1740

VICA
Vocational Industrial Clubs of America
Federation of state associations and local clubs of young secondary students in trade, industrial and health occupations programs.
P.O. Box 3000
Leesburg, VA 22075
(703) 777-8810

ERIC DESCRIPTORS

Adult Vocational Education
Apprenticeships
Blue Collar Occupations
Building Trades
Data Processing Occupations
Electrical Occupations
Industrial Arts
Industrial Education
Industrial Personnel
Industrial Training
Mechanical Skills
On The Job Training
School Shops
Semiskilled Occupations
Semiskilled Workers
Service Occupations
Service Workers
Skilled Occupations
Skilled Workers
Technical Education
Technical Occupations
Technology
Trade and Industrial Teachers
Vocational Education
Vocational Industrial Education

SELECTED REFERENCES

Annual Review of Research in Vocational Education (Vol. 2). Urbana-Champaign, IL: University of Illinois, 1981.

Competency-based Vocational Education: A Review. Columbus, OH: National Center for Research in Vocational Education, 1977. ED 149 184

Curriculum Development in Vocational and Technical Education. Boston: Allyn and Bacon, 1979.

Evaluating Occupational Education and Training Programs. Boston: Allyn and Bacon, 1980.

Review and Synthesis and Research in Trade and Industrial Education. Columbus, OH: Center for Vocational and Technical Education, 1966. ED 011 560

Review and Synthesis of Research and Development in Technical Education. Columbus, OH: National Center for Research in Vocational Education, 1980. ED 193 526

Review and Synthesis of Research in Technical Education. Columbus, OH: Center for Vocational and Technical Education, 1966. ED 001 159

Review and Synthesis in Technical Education (Research Series No. 47). Columbus, OH: Center for Research and Leadership Development in Vocational and Technical Education, October 1969.

Review and Synthesis of Research in Trade and Industrial Education (Research Series No. 43). Columbus, OH: Center for Research and Leadership Development in Vocational and Technical Education, September, 1969. ED 011 560

Review and Synthesis of Research in Vocational Education (Information Series No. 101). Columbus, OH: Center for Vocational and Technical Education, 1973. ED 087 898

Review and Synthesis of Research on Individualizing Instruction in Vocational and Technical Education. Columbus, OH: Center for Vocational and Technical Education, 1971. ED 058 389

Summaries of Studies in Industrial Arts, Trade and Industrial, and Technical Education: Dissertation Abstracts. Greeley: University of Northern Colorado, annually.

Summaries of Studies in Industrial Arts, Trade and Industrial, and Technical Education. *Journal of Industrial Teacher Education. 11* (Fall, 1973): 92-95.

Trade and Industrial Education. In *Encyclopedia of Educational Research*, Fifth Edition, 1983, 1937-1947.

Trade and Industrial Education Philosophy and Standards of Excellence. F[illegible] Church, VA: National Association for Trade and Industrial Education, 1975.

Trade and Industrial Education Research in Teacher Education and Certification Since 1963. In *Trade and Industrial Teacher Education and Certification*. Columbus, OH: Center for Vocational and Technical Education, 1968. ED 025 644

Training Research and Education. New York: Wiley, 1962.

Vocational Instructional Materials for Trade and Industrial Education. Available from Federal Agencies. Washington, DC: Human Resources Management, Inc., 1980.

ERIC References (other than above):

ED 099 665
ED 112 067
ED 174 809
ED 186 717
ED 212 867

BASIC ACADEMIC SKILLS

CONTEMPORARY ISSUES

One issue is that increasing numbers of students are staying in school longer and longer, thus the mean level of skills at any particular grade is diluted. There is a gradual upward shift of academic content. What used to be mastered in the lower grades now also must be taught in higher grades. The vocational education emphasis on academic skills is an outgrowth of this gradual development. Vocational educators find themselves needing to teach academic skills prerequisite to their respective service area.

There is also more need for basic academic skills due to **technological change.** Many of the skills now required, or soon to be needed in new and emerging occupations, are more demanding in terms of basic skills. The need for basic math concepts in electronics related professions is one example. Basic language skills are also more in demand for reading and understanding technical manuals and instructions. Communication skills are necessary for the numerous service-oriented occupations now emerging. It is not clear however, what specific skills are required for what fields, or conversely, what basic academic skills learning may happen as one outcome of vocational education programs.

Another problem area is a lack of instrumentation to measure the basic skills that are important to vocational education. We have a limited ability to assess the skill requirements of different occupational clusters.

Another problem area is the limited understanding of the learning/teaching process for acquiring adult academic skills, especially reading. Most of the understanding we do have applies almost exclusively to children. Even there, the optimal sequencing of instruction is not well understood. Our understanding of how to teach math concepts is better since the structure of mathematical knowledge is better understood. However, even there there is much that is not understood.

The understanding of adult reading and language skills will become more acute as lifelong learning, job retraining, and adult re-entry into educational programs become more frequent trends. The problem of upgrading adults' skills in this area (as well as math) is a matter of overcoming prior mis-learning, and academic anxiety, more than in the case of children. The trend toward individualized instruction may help considerably in this regard.

ERIC DESCRIPTORS

Adult Basic Education
Alphabetizing Skills
Audiolingual Skills
Basal Reading
Basic Skills
Basic Vocabulary
Beginning Reading
Communication Skills
Developmental Studies Programs
Functional Literacy
Handwriting Skills
Language Skills
Literacy

Literacy Education
Mathematics
Minimum Competencies
Minimum Competency Testing
Reading Comprehension
Reading Readiness
Reading Skills
Sight Vocabulary
Skill Development
Skills
Study Skills
Verbal Ability
Vocabulary Skills
Writing Skills

SELECTED REFERENCES

Applied Business Mathematics. Cincinnati, OH: Southwestern Pub. Co., 1980.

Basic English for Business Communication. Belmont, CA: Fearon Pitman Pub., 1978.

Literature Search. Teaching Basic Skills through Vocational Education. Technical Report. Cornell Institute for Occupational Education. Ithaca, NY: State University of New York, 1982. ED 217 160

Mathematics for Carpenters. Albany, NY: Delmar Publishers, 1975.

Mathematics for Health Careers. Albany, NY: Delmar Publishers, 1980.

Mathematics for Machine Technology. Albany, NY: Delmar Publishers, 1974.

Mathematics for Plumbers and Pipefitters. Albany, NY: Delmar Publishers, 1973.

Mathematics of the Shop. Albany, NY: Delmar Publishers, 1978.

Math Principles for Food Service Occupations. Albany, NY: Delmar Publishers, 1979.

Marketing Math. Cincinnati, OH: Southwestern Pub. Co., 1979.

Readability Analyses of Selected Vocational Texts. Teaching Basic Skills through Vocational Education. Technical Report. Cornell Institute for Occupational Education. Ithaca, NY: State University of New York, 1982. ED 217 164

Sample Lesson Ideas for Basic Skill Instruction in Selected Vocational Programs. Teaching Basic Skills through Vocational Education. Technical Report. Cornell Institute for Occupational Education. Ithaca, NY: State University of New York, 1982. ED 217 161

Selected Instructional Materials for Teaching Basic Skills in Vocational Education. Teaching Basic Skills through Vocational Education. Technical Report. Cornell Institute for Occupational Education. Ithaca, NY: State University of New York, 1982. ED 217 159

Selected Standardized Tests and Assessment Instruments for Measuring Occupational Competencies. Teaching Basic Skills through Vocational Education. Technical Report. Cornell Institute for Occupational Education. Ithaca, NY: State University of New York, 1980. ED 217 165

Shoptalk: Vocational Reading Skills—Agriculture. Boston, MA: Allyn and Bacon, 1978.

Shoptalk: Vocational Reading Skills—the Automobile. Boston, MA: Allyn and Bacon, 1978.

Shoptalk: Vocational Reading Skills—Electronics. Boston, MA: Allyn and Bacon, 1978.

ERIC References (other than above):

General:
ED 206 665
ED 208 858
ED 209 262
ED 210 259
ED 211 178
ED 211 686
ED 213 460
ED 216 449
ED 218 648
ED 218 649

Multi-Occupational:
ED 001 428
ED 029 951
ED 065 665
ED 088 052
ED 096 708
ED 105 227
ED 112 156
ED 113 740
ED 147 633
ED 167 753

Selected Occupations:
ED 130 370 (Distributive Education)
ED 170 459
ED 140 064 (Home Economics)
ED 164 882
ED 166 441
ED 022 685 (Business Education)
ED 084 511
ED 096 470
ED 143 809
ED 146 321
ED 096 465 (Technical Education)
ED 110 717
ED 127 625
ED 110 717 (T & I Education)
ED 117 457
ED 120 683
ED 145 189

COMPETENCY TESTING

CONTEMPORARY ISSUES

With the current emphasis on competency-based vocational education and its evaluation has come a renewed interest in the objective measurement of occupational competencies. There is currently a great deal of ferment in this area related to two broad areas:

1) the technical issues being discussed, and
2) practical considerations (implementation, political acceptance, legal complications, etc.).

Among the major technical issues are such matters as:

1) Broadening the basis for evaluation;
2) identifying competencies;
3) standard-setting;
4) work samples versus simulations;
5) individualized testing and mastery learning.

The mandate to assess the effectiveness of vocational education has been hampered by a narrow approach to evaluation which relied excessively on employment statistics. However, difficult labor market conditions make it evident that this type of data fluctuates so much with the economy that it does not provide a fair or complete evaluation of how well vocational programs are preparing students for the world of work. While vocational education traditionally has had a competency-based orientation, only fairly recently has the basis for evaluation broadened to include objective measurement of student competencies.

The state-of-the-art of vocational competency testing is committed to the identification of actual work samples, i.e., to actual work-related **performance.** Actual work samples generally are recognized as the best indicators of how well students will perform on the job or jobs for which they were trained. The opinions of panels of teachers as experts are **not** accepted as substitutes. Validation is a matter of empirical evidence, not personal opinion. There is often enough ambiguity in identifying the relevant competencies to test, however, to warrant some participation of "stakeholders" in the process.

The complexity of work-related competencies is evident in the various "taxonomies" of objectives which have been used. For example, it is recognized that successful employees have more than technical skills and knowledge. Relevant work-related attitudes, and other non-technical characteristics, are also important, and so are included in a full-orbed evaluation of student outcomes.

Standard-setting is one of the most troublesome technical issues. It is generally recognized that the setting of a criterion for acceptable performance on some task (e.g., typewriting at 65 words-per-minute) is, almost by definition, arbitrary and judgmental. There is no clearcut connection between the criterion and acceptable job performance. Therefore, standards-setting is strenuously opposed by some testing specialists. More frequently, standards-setting is accepted as necessary based on the intended use of tests in decision-making. In recognition of the uncertainty surrounding the use and interpretation of standards, the involvement of relevant public audiences is recommended to referee the standards-setting process. This problem thus quickly becomes a practical and political one: i.e., obtaining political consensus in the adoption of standards.

Most of the emphasis in test development is on taking representative samples of work-related performance from which to design objective paper-and-pencil tests and work samples or on-the-job checklists. However, there is also a great deal of activity in the construction of simulations. In contrast to work samples, which have a high fidelity to real-life tasks, simulations require the examinees to pretend they are engaged in some real task. Included among simulations are such varied techniques as role-playing, in-basket tests, management games, and leaderless group discussions. The low risk to examinees and equipment is a strong argument for using simulations, particularly as vocational education graduates become involved with progressively more complicated and expensive equipment.

Individualized or tailored testing involves matching the difficulty of test items administered to the proficiency level of the examinee tested. This technique is particularly useful in combination with a mastery approach in which the goal is to have all, or nearly all, students achieve some prescribed level of proficiency. The requirements for implementing the approach, including individualized learning experiences as well as inidividualized testing, are justified by success in achieving the goal. The strategy of tailored testing also reduces the amount of testing required for valid measurement, yielding a potential utility (dollar benefits adjusted for cost) far exceeding the conventional test battery. Despite technical problems in implementing this technique, the promise for improving the efficiency of occupational competency testing appears great.

Among the major practical considerations involved in competency testing are the following issues:

1) certification decisions;
2) incorporating legal concerns in test development;
3) rapid obsolescence of tests.

Along with the uncertainty of standards-setting are the inevitable errors that follow upon decisions based on the tests. Certain decisions which are unfavorable to an individual may mean nothing more costly than the need to receive remediation. However, other decisions such as those concerning certification, can have long term implications for the individual's future. Testing is generally more useful for decisions regarding groups of persons than for specific individuals.

The dilemma involved in certification decisions can be reduced to trade-offs resulting from the various possible decisions. On the one hand, rejecting an examinee based on low scores can be justified on the argument that we need to protect society from incompetence. The cost to society of a "false negative" (i.e., rejection of a qualified person). On the other hand, bureaucratic tendencies to make certification a **barrier**, i.e., a tool for limiting access to a career, is an obvious source of inequity. Creating undue career barriers for **persons** can be avoided by careful attention to:

1) broad participation of various audiences in selecting certification standards, and
2) preventing irrelevant criteria from intruding into the process.

As soon as performance testing becomes institutionalized, teachers and administrators need to be sensitive to a variety of legal concerns. Some of these have to do with privacy and confidentiality. It is particularly important that test scores not be divulged to prospective employers, or anyone else, without consent. More fundamentally, legal concerns should play a role in the development of performance testing. The testing program should be designed and implemented in a careful manner, e.g., by documenting the occupational relevance of the standards adopted, by building in remediation for students who failed to demonstrate proficiency, etc. This approach will forestall legal challenges while improving the quality of the program.

The rapid obsolescence of tests poses a serious challenge to the competency testing movement. Both the changes over time and the diversity found from one place to another, in jobs which are nominally identical, suggest that the present scale of effort is inadequate. This raises the practical matters of expanding the competency testing effort, and of streamlining the development and dissemination process.

In summary, the state-of-the-art in competency testing reveals many issues of both a technical and practical nature. The overriding reality, however, is that competency tests will come into increasing use. As this happens, we may expect them to become increasingly useful to educators and employers alike.

ERIC DESCRIPTORS

Accountability
Achievement
Behavioral Objectives
Competence
Competency Based Education
Competency Based Teacher Education
Criterion Referenced Education
Criterion Referenced Tests
Employment Qualifications
Employment Tests
Job Analysis
Job Performance
Job Skills
Minimum Competencies
Minimum Competency Testing
Occupational Tests
Output Oriented Education
Performance
Performance Based Education
Performance Tests
Personnel Evaluation
Personnel Tests
Proficiency Based Education
Skill Analysis
Skills
Student Certification
Student Evaluation
Task Analysis
Test Construction
Vocational Aptitude
Vocational Tests
Work Sample Tests

SELECTED REFERENCES

A compendium of assessment techniques. Princeton, NJ: Cooperative Assessment of Experiential Learning, Educational Testing Service, January 1975.

A state-of-the-art review of techniques and procedures for the measurement of complex human performance. Consulting report. Alexandria, VA: Human Resources Research Organization, April 1974. ED 150 167

Affective work competencies for vocational education. Information Series No. 138. Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education, 1978. ED 166 420

Affective work competencies, Phase II. Final report. Columbia, MO: University of Missouri, College of Education, 1978. ED 167 727

Alternative conceptions of competence assessment: Proceedings of the 1979 Annual CAPT Conference. Portland, OR: Northwest Regional Educational Laboratory, November 1979.

Alternative systems of evaluation. Paper presented at the sixth annual seminar of New York State Directors of Occupational Education, 1978.

Assessing occupational competencies—A CAEL handbook. Princeton, N.J.: Educational Testing Service, 1977.

Criterion-referenced testing and measurement: A review of technical issues and developments. *Review of Educational Research,* 1978, *48*(1), 1–47.

Defining and measuring competence. San Francisco: Jossey-Bass Inc., 1979.

Evaluating occupational education and training programs. Boston, MA: Allyn and Bacon, 1975.

Evaluating vocational education policies and plans for the 1970s. New York: Praeger, 1974.

Evaluation models for vocational educators. Olympia, WA: Washington State Commission for Vocational Education, 1978.

Evaluation of vocational education. In A. Letcht (Ed.), *Evaluating vocational education policies and plans for the 1970s.* New York: Praeger, 1974.

Handbook of performance testing: A practical guide for test makers. Princeton, NJ: Educational Testing Service, 1971.

Issues and models in vocational education evaluation. In T. Abramson, C. K. Tittle, & L. Cohen (Eds.) *Handbook of vocational education evaluation.* Beverly Hills, CA: Sage, 1979.

Job analysis: Key to program articulation. *Educational Technology*, March 1979, 30–34.

Mastery learning: Theory and practice. New York: Holt Rinehart, and Winston, Inc., 1971.

Measurement of job-performance capabilities. San Diego, CA: Navy Personnel Research and Development Center, December 1976. (ADA033992, NTIS)

Measuring student competencies—Heart of CBVE. *American Vocational Journal*, 1978, *53*(1), 48–53.

National Occupational Competency Testing Project: Handbook for developing and administering occupational competency tests. Volume 3. New Brunswick, NJ: Rutgers, the State University, Department of Vocational-Technical Education, February 1971. (ED 057 217)

Performance content for job training: Deriving performance requirements for training (Vol. 4). Columbus, OH: Ohio State University, 1977.

Performance content for job training: Identifying relevant job performance (Vol. 3). Columbus, OH: Ohio State University, 1977.

Performance content for job training: Stating the tasks of the job (Vol. 2). Columbus, OH: Ohio State University, 1977.

Performance content for job training: Volume 1: Introduction. Research and Development Series No. 121. Columbus, OH: Ohio State University, Center for Vocational Education, March 1977. (ED 146 369)

Performance testing: Issues facing vocational education. Research and Development Series No. 190. Columbus, OH: The Ohio State University, National Center for Research in Vocational Education.

Proficiency measurement: Assessing human performance. In R. Gagne (Ed.), *Psychological principles in system development.* New York: Holt, Rinehart and Winston, Inc., 1962.

Program evaluation in vocational education: A review. Information Series No. 117. Columbus, OH: The Center for Vocational Education, 1977.

Setting standards in competency-based education: Some current practices and concerns. In M.A. Bunda & J. R. Sanders (Eds.) *Practices and problems in competency-based education.* Washington, DC: National Council on Measurement in Education, 1979.

Some selected technical issues related to performance testing. In J. E. Spirer (Ed.), *Performance testing: Issues facing vocational education.* Research and Development Series No. 190. Columbus, OH: The Ohio State University, National Center for Research in Vocational Education. ED 187 930

The assessment of learning: A base for instructional evaluation. In A. A. Cross (Ed.), *Vocational instruction.* Arlington, VA: The American Vocational Association, Inc., 1980.

The "C" in CBE. *Educational Researcher*, 1978, *7*(5), 13–16.

The components of competency-based vocational education. *American Vocational Journal*, 1977, *52*(8), 32–35.

Vocational education outcomes: Annotated bibliography of related literature. Bibliography Series No. 48. Columbus, OH: The Ohio State University, The National Center for Research in Vocational Education, 1979.

Vocational education outcomes: Perspective for evaluation. Columbus, OH: The Ohio State University, The National Center for Research in Vocational Education, 1979.

VoComp to develop CBVE measures. *School Shop*, 1980, *39*(8), 66-67.

Note: the recent works of Dr. A. Chalupsky, American Institutes for Research, Palo Alto, California, in this area, is especially noted.

ERIC References (other than above):

ED 214 104
ED 214 974
ED 217 148
ED 217 165
ED 220 478

COMPUTER APPLICATIONS

CONTEMPORARY ISSUES

The proliferation of computer technology figures to have a more profound impact on vocational education than perhaps any other single factor. The pervasive influence of the computer is already making itself felt. In the last few years, the advent of the microprocessor chip has led to lowered cost and greater accessibility of the computer to more and more users. Many schools now require "computer literacy" of all their graduates. On the other hand, many educators have adopted a wait-and-see attitude in view of the highly volatile stage of hardware development. No one doubts that some knowledge of computer hardware and software, at least on an elementary level, will become increasingly necessary both in the workplace and, eventually, in the home. But just what type of "literacy" should be advocated is more difficult to ascertain.

Computer applications of interest to vocational educators may be divided into three areas:

1) occupational;
2) instructional; and
3) bibliographic or informational.

Examples of occupational changes due to computerization are all around us. For example, computer-assisted design (CAD) and computer-assisted manufacturing (CAM) are two applications which are transforming occupations. Information management and word processing are also particularly obvious areas of highly volatile change in office occupations. Publishing, printing, accounting and inventorying are still other areas of rapid transition. Indeed, few occupations will be left untouched by these developments.

Changes in labor and skill requirements due to the computer are already apparent. Among the jobs most significantly affected are those in particular computer-using industries, e.g., computer operators, programmers, typists and secretaries, insurance claims processors, accountants, and many more. The changing job mix can mean a decreasing demand for certain types of skills, such as certain traditional secretarial skills, along with a rising premium on worker adaptability. The rapid changes in word processor technology, for example, make it mandatory for a worker to understand fundamental concepts of document production and information management, rather than learning specific, and quickly outdated, console skills. Even with the lowering costs of computer technology, cost-effective ways need to be designed to prepare workers to adapt quickly to new technology. Career guidance also needs to accommodate rapidly so that employees are helped to exploit the possibilities for rapid advancement that computer applications are bringing about.

Computer applications in educational practice are becoming more and more pervasive as well. There is a large and growing literature on such computer applications as computer-assisted instruction (**CAI**), computer-managed instruction (**CMI**), interactive instruction (**II**) and computer-based instructional simulation (**CBIS**). (See references below.) Some possibilities of these techniques are touched upon in the discussion of contemporary issues in instructional technology in this guide. They include:

1) flexibility in meeting individual learning needs;
2) compatibility with open-entry, open-exit formats to serve many categories of students;
3) savings in tool and equipment purchases;
4) lower risk of damage to expensive equipment. There still exists a great deal of need for courseware as well as assistance in evaluating and implementing it.

Computer applications in bibliographic services and information management are becoming more important, not only to experts, but to the average lay person as well. In our complex society, the information load becomes increasingly greater as knowledge expands. Thus, the need is growing for people in general to avail themselves of the information storage and retrieval capabilities of computers. Indeed, the home computer is becoming a reality for more persons as the price has fallen. In turn, the level of sophistication will increase and the demand for access to databases will also rise. Instant availability of information, even in remote places, by means of the telephone, is another dimension of these developments. Thus, remote work sites will be able to tap work-related databases for more rapid solutions of on-site problems. On the other hand, there are still a number of obstacles before these potential benefits are realized. High online costs and rapid obsolescence of knowledge are only two.

Information on specific databases for the various service areas and special interests are found in the publication: **Databases and Clearinghouses: Information Resources for Education.** This publication is available from the National Center for Research in Vocational Education as well as ERIC. The information for each entry includes bibliographic citations, abstracts, contact information, size of the database, and other pertinent information.

Social commentators such as Toffler and Naisbett have taught us to look for and anticipate the long-range social ramifications tied in with technological change. The scale of these changes is global. Vocational educators need to be aware of these ramifications, but you need not suffer unduly from "future shock." You can also "shock the future" by making significant contributions to the shape of our future.

ERIC DESCRIPTORS

Autoinstructional Aids
Computer Aided Instruction
Computer Assisted Instruction
Computer Assisted Learning
Computer Assisted Testing
Computer Based Instruction
Computer Managed Instruction
Computer Oriented Programs
Computers
Data Banks
Databases
Data Processing
Educational Media
Individualized Instruction
Information Retrieval
Information Storage
Item Banks
Library Collections
Management Information Systems
Man Machine Systems
Online Systems
Programmed Instructional Materials
Programmed Tutoring
Reference Services
Research Tools
Search Strategies
Teaching Machines
Teleconferencing
Test Construction

SELECTED REFERENCES

Computer-based Instruction: [illegible]anagement Systems: A first look. [illegible]iew of *Educational Research*, 1971, 4[illegible], 51-70.

Computerized instruction and the learning process. *American Psychologist*, 1968, *23*, 225-239.

Educational Potentials of Computer Technology. Cambridge, MA: Bolt, Beranek & Co., 1968.

Effectiveness of Alternative Instructional Media. *Review of Educational Research*, 1974, *44*, 1-67.

Effects of New Technologies. *Social and Labour Bulletin*, 1980a, 6-15.

Effects of New Technologies. *Social and Labour Bulletin*, 1980b, 135-156.

How effective is CAI? A Review of the Research. *Educational Leadership*, 1975, *33*, 147-153.

Index to Computer-based Learning. Englewood Cliffs, N.J.: Educational Technology Publications, 1973.

Index to Computer-based Learning. Milwaukee: University of Wisconsin, Instructional Media Laboratory, 1976.

Some "facts" about CAI: Trends 1970-1976. *Journal of Educational Data Processing*, 1976, *3*, 1-12.

Speculations on the Social Effects of New Microelectronics Technology. *International Labour Review*, *119* 705-721.

The International Stakes in Microelectronics. *Technology Review*, *83*, 1981, 40-43.

The New Industrial Revolution: How Microprocessors May Change the Workplace. *The Futurist*, 1981, *15*, 30-42.

The Power of Microprocessors. *Technology Review*, 1981, *83*, 46-54.

A Computer-Based Study Management System. *Educational Psychologist*, 1974, 11, 36-45.

A Computer-Managed Instruction Support System for Large Group Individualized Instruction. *Journal of Computer-based Instruction*, 1977, 4(1), 17-21.

Computer Applications in Education and Training: Status and Trends. (NPRDC TR 75 32). San Diego, CA: Navy Personnel Research and Development Center, April 1975.

Computer Applications in Individually Guided Education: A Computer-based System for Instructional Management, Needs, and Specifications (Working Paper No. 125). Madison, WI: University, Research and Development Center for Cognitive Learning, 1974. ED 094 692

Computer Assistance for Instruction: A Review of Systems and Projects. In D. D. Bushnell & D. W. Allen (Eds.), *The Computer in American Education*. New York: Wiley, 1967.

Computer-assisted Instruction. *Science*, 1968, *162*, 73-77.

Computer-based education: Research, theory, development. *Educational Communication and Technology Journal*, 1978, *26*, 79-93.

Computer-based instruction: A revolution in the making? *Educational Technology*, 1979, 19, 20-26.

Computer-based instruction: Frontiers of thought. Association for the Development of Computer-Based Instructional Systems. 1981 conference proceedings. Bellingham, WA: The Association, 1981.

ERIC References (in addition to above):

ED 094 746
ED 125 533

COOPERATIVE EDUCATION

CONTEMPORARY ISSUES

A major reason for the rising popularity of cooperative education is its quick adaptability to a changing job market. Openings for placements are closely related to work opportunities. Students therefore receive more responsive training in terms of the current occupational scene. Additionally, cooperative education students often are helped to make wiser career choices and suffer less foregone earnings than traditional vocational students. Schools also benefit from a higher success rate in placing their graduates with employers in jobs related to training.

Cooperative education has enjoyed broad acceptance within business and industry. The main advantages for employers are:

1) increased employability of potential employees through better developed job-related student skills and attitudes;
2) an opportunity to foster their own philosophies and values while developing student workers;
3) a ready source of highly motivated, entry-level personnel;
4) a device for recruiting the most promising personnel.

Despite these advantages, there are still a number of possible problem areas. Like any educational innovation, cooperative education has its pitfalls. For instance, in some cases the cooperative method may have to overcome barriers such as:

1) educators' not wishing to lose students;
2) employers' looking for cheap labor rather than students' occupational development; or
3) students' wanting immediate profit and release from school rather than long term development and enhanced employability.

Although such difficulties may be in the minority, some conflicts of interest do occasionally arise even in a program the essence of which is cooperation. Reviews of the literature generally conclude, however, that on balance, the educational objectives of enhancing long term personal development and increasing employability are being achieved. Overall, the benefits of cooperative education for all participants appear to outweigh the possible costs.

Several major contemporary concerns that still remain may be organized under the following headings:

1) effective instructional modes;
2) special needs students;
3) equity in job placements;

Cooperative education programs take a variety of forms, the only consistency being that the work environment is used to achieve educational goals. Two important approaches are:

1) the "capstone" approach, in which the cooperative work experience occurs after one or more years of in-school vocational training, and
2) the "diversified occupations" approach, which emphasizes on-the-job training with little or no prior vocational training in school.

Whether one method, or a combination, is preferred depends on the program objectives. A structured approach, which makes the responsibilities and expectations of all parties explicit, appears to be most successful in teaching occupational competencies. Individualized instruction is recommended wherever possible to assure that personal goals are reached. The key element is careful planning, with attention to the written training arrangements, and supervision of the work experience and in-school activities so that they contribute the maximum toward the students' employability.

In recent years, there has been greater stress on meeting the vocational needs of disadvantaged and handicapped workers. The major problem here lies with increasing the knowledge regarding how to work with these special students. A number of successful programs have been developed, but the number of special needs participants is increasing. It is crucial that these participants be matched with the jobs which are closest to their career goals. This will increase the likelihood of their success and favorably influence their subsequent work experience.

Closely related is the problem of equity in job placements. Segregation of job placement by sex, discrimination on the basis of student attitudes, and restriction of placement offerings to the most conforming students, were among the unfavorable comments uncovered in a national review of fifty cooperative programs. Race, age, and socio-economic class are other irrelevant criteria which have been found to influence job placements. While these complaints represent only a relatively small number of comments, they are serious and persistent enough to warrant concern.

In summary, cooperative education has a proven record of effectiveness as a viable approach to preparing people for work entry. However, as public funds become less readily available, the need for cooperative education programs to prove their value and account for previous investment will continue.

ERIC DESCRIPTORS

Adult Vocational Education
Affiliated Schools
Career Education
Cooperative Education
Cooperative Programs
Cooperative Training
Distributive Education
Educational Cooperation
Experience-Based
Experiential Education
Experiential Learning
Field Experience Programs
Instructor Coordinators
Job Placement
Practicums
School Business Relationship
Student Placement
Supervised Farm Practice
Vocational Development
Vocational Education
Vocational Work Experience
Work Experience
Work Experience Programs
Work Study Programs

SELECTED REFERENCES

Cooperative Education. Final Report. Fond du Lac, WI: Moraine Technical Institute, June 1974. ED 122 888

Cooperative Education: A Review. Information Series No. 116. Columbus, OH: ERIC Clearinghouse on Career Education, Ohio State University, 1977.

Cooperative Education for Rural Students? It's Possible. *American Vocational Journal.* 50 (May 1975): 26-28.

Cooperative Education in Two-Year Colleges. Final Report. Ithaca, NY: Cornell Institute for Occupational Education, New York State College of Agriculture and Life Sciences, 1980.

Cooperative Education: Vocational Occupational Career. Indianapolis, IN: Bobbs-Merrill Company, Inc., 1977.

Cooperative Vocational Education: Principles, Methods, and Problems. Boston, MA: Allyn and Bacon, Inc., 1977.

Education and Work Competencies Needed by Experiential Education Personnel. Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, 1979.

Employer Experience for the Recruitment of Cooperative Education Employers: An Analysis of Costs and Benefits. *The Journal of Cooperative Education.* 13 (November 1976): 16-31.

Experiential Education: A Primer on Programs. Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, 1978.

Experiential Learning and the Assessment Problem. *American Vocational Journal.* 51 (October 1976): 39-41.

Foundations of Vocational Education. Columbus, OH: Charles E. Merrill Publishing Co., 1971.

Individualized Training Plans for Co-op Students. *Proceedings of the Meeting of the American Vocational Association in New Orleans, 1974.* Washington, DC: American Vocational Association, May 1975.

Orchestrating Vocational Education with Industrial Training. *American Vocational Journal.* 52 (April 1977): 27-29 and 33.

Post-Secondary Cooperative Education Abstracts. Los Angeles: University of California, ERIC Clearinghouse for Junior Colleges, 1973. ED 079 475

Review and Synthesis of Literature on Job Training in Industry. Columbus, OH: Ohio State University, Center for Vocational and Technical Education, 1972.

School Supervised Work Experience Programs: Costs and Effects on Personal Development, Education and Employment. Final Report. University Park, PA: The Pennsylvania State University, Institute for Research on Human Resources, November 1976.

Survey of Cooperative Education, 1976. *The Journal of Cooperative Education.* 13 (November 1976): 57-65.

Toward an Evaluation of Cooperative Education: A Managerial Perspective. Pittsburgh, PA: University of Pittsburgh, Graduate School of Business.

Vocational Education Cooperative Work Experience for Handicapped and Disadvantaged Youth. *Proceedings of the Meeting of the American Vocational Association in Atlanta, 1973.* Washington, DC: American Vocational Association, May 1974, p. 126.

Work-Study: Education's Sleeper. *Phi Delta Kappa.* 57 (January 1976): 322-323.

Youth: Work Entries through Vocational Education. *Vocational Education for Special Groups. The Sixth Yearbook of the American Vocational Association.* Washington, DC: American Vocational Association, 1976.

Zero in Cooperative Vocational Education: Training Agreements. Washington, DC: Division of Vocational and Technical Education, January, 1974. ED 114 648

ERIC References (other than above):

ED 113 452
ED 140 909
ED 154 658
ED 207 882
ED 208 222
ED 212 665
ED 212 910
ED 215 139
ED 215 823
ED 216 213
ED 217 179
ED 217 210
ED 217 211
ED 217 215

INSTRUCTIONAL TECHNOLOGY

CONTEMPORARY ISSUES

Rapid developments in instructional technology are producing changes in educational programs that are here to stay. The advent of the microprocessor chip in the mid-70's, making possible minicomputers at affordable prices and a host of educational applications by the early 80's, is the newest, most revolutionary development, along with companion developments in telecommunications, laser-optics, and satellites. The proliferation of software for computer-assisted instruction (**CAI**), plus gaming and simulation, is another companion development. In addition, the techniques of individualized and competency-based education which have a relatively longer philosophical and practical history, now complement the modern adaptations of CAI. Large data banks of task analyses and objectives, and audiovisual tutorial techniques, are related developments particularly relevant to vocational instruction.

However, several factors are causing educators to proceed cautiously before adopting new technology. One is cost. For computer-related items, cost is falling but still significant. Public accountability and limited dollars dictate that new technology must prove its worth in pragmatic and economic terms; i.e., it must be **cost-effective**. Second, technology is not universally hailed as a panacea. Planners and teachers want techniques with proven advantages over older ones for developing student competencies. Third is the well-known conservatism of educational programs. "Tried and true" methods are familiar and part of the family. Newcomers have to win their acceptance. Staff development, and other implementation techniques addressed in this guide, can help in this process of adoption.

Nonetheless, there is a powerful rationale behind these developments which appears well-suited to the demands of modern vocational education. First, it is competency-oriented. While vocational educators have always tended to have this orientation, the provision of specifications of competency for so many occupations, with many flexible routes to attainment, is new. Second, it is truly individualized. This has implications for accommodating variable content, teaching methodology, learning styles, entry/exit, learning time, etc. This helps to serve the increasingly broad range of ages and backgrounds now found in many educational programs.

With the trend toward individualizing instruction, inevitably the issue of the impersonalizing of educational programs is brought up. However, individualized instruction appears to promise the reverse consequence through increased learning efficiency and freeing teachers from routine clerical tasks. A premium will then be placed on the teacher's ability to inspire, motivate, deal with the student's personal problems, and the like.

One important issue related to the trend toward broader individualization of instruction is a gradual breakdown of the compartmentalized tracking system so characteristic of education heretofore. Programs may lose their discrete identities as students are permitted to tailor their learning to meet their unique constellation of needs and career plans. The curriculum will be characterized by less hermetically sealed subject areas. Shifting back and forth between traditional subject areas, or identifying generic concepts and skills, may be the hallmark of emerging instructional patterns, made possible by new technology.

Thus, information technology can potentially improve educational services. However, advances in technology do not translate automatically into improved programs. The need has never been greater for educators to "get smart" about what is available, or emerging. One rather critical need is for evaluation techniques to match the technological innovations. Instruments for the evaluation of computer-based instructional software is one example.

The developments in instructional technology discussed above cannot be separated from a changing conception of the nature and role of education. Vocational education is mandated to prepare graduates with employable skills; thus, programs are, presumably, designed to meet the needs of business and industry. The general model of education, however, is to stockpile human resources in advance of the demand for these resources. The invested capital to produce these resources is to be recovered later, when the demand is anticipated to occur. The problem is this: even when demand is carefully calculated in advance as is the intent of the Vocational Education Amendments, this demand is current, not future. Rapid changes in the occupational scene make future projections inherently hazardous. Therefore, if better projections are not the answer, perhaps a different model of education is.

The concept of **just in time** delivery of services is becoming more familiar in industry. Capital is not invested in production until orders or subscriptions are received. Thus, services are **just in time** and meet the demand. Stockpiling of resources is an archaic practice because it is so costly. The capital investment is large given the probability of eventual use. **Just in time** delivery of educational services is likely to grow in the future. New instructional technology will make it increasingly possible to tailor instructional programs to prepare for just emerging demands. In practice, this might mean emphasizing the most general principles in a particular area. In accordance with modern learning theory, these general principles provide the best preparation for learning particular applications just emerging in new occupations. The payoff would be the preparation of job entrants who are optimally able to adjust and learn the particular skills of a specific job if and when they are assigned that job. Costly investment in preparing for machine applications which become obsolete would be avoided.

In sum, the newer instructional technology faces some of the same impediments to effective use that educational innovations have always confronted. On the other hand, its potential is now very great for helping vocational education respond to emerging challenges.

ERIC DESCRIPTORS

Audiovisual Aids
Audiovisual Communications
Autoinstructional Aids
Computer Assisted Instruction
Computer Managed Instruction
Computer Oriented Programs
Cybernetics
Educational Development
Educational Equipment
Educational Innovation
Educational Media
Educational Methods
Educational Resources
Educational Technology
Educational Television
Instructional Design
Instructional Improvement
Instructional Innovation
Instructional Materials

Instructional Systems
Multimedia Instruction
Programmed Instruction
Systems Analysis
Systems Approach

SELECTED REFERENCES

Computers and the Learning Society (Report of the Committee on Science and Technology, U.S. House of Representatives). Washington, DC: U.S. Government Printing Office, June 1978.

Developing Vocational Instruction. Palo Alto, CA: Fearon, 1967. ED 069 876

Educational Technology—Adolescence to Adult-hood. *Educational Communication and Technology Journal,* 1978, 26, 142-152.

Handbook of Procedures for the Design of Instruction (2nd ed.). Englewood Cliffs, NJ: Educational Technological Publications, 1981.

How Effective is CAI? A review of the research. *Educational Leadership,* 1975, 33, 147-153.

How to Make the Right Decision about Microcomputers. *Instructional Innovator,* September 1980, 25(6), 12-19.

Information Technology in Education (Report of the Joint Hearings of the Committee on Science and Technology and the Committee on Education and Labor of the U.S. House of Representatives, April 2-3, 1980). Washington, DC: U.S. Government Printing Office, 1980, p. 163.

Instructional Design: Principles and Applications. Englewood Cliffs, NJ: Educational Technology Publications, 1977.

Instructional Technology: On Diversity in Education. *Communications Review,* 1976, 24(2), 117-134.

Media Use in Education. In H.E. Mitzel (Ed.), *Encyclopedia of Educational Research* (5th ed.). New York: Macmillan, 1982.

Military and Industrial Training. In L. J. Briggs (Ed.), *Instructional Design: Principles and Applications.* Englewood Cliffs, NJ: Educational Technology Publications, 1977. pp. 353-391.

Systems of Individualized Education. Berkeley, CA: McCutchan, 1975.

Technology and Education: Here Comes the Future. In *1980 Annual Report.* Princeton, NJ: Educational Testing Service, 1980, pp. 5-8.

The Present and the Future in Educational Technology. New York: Alfred P. Sloan Foundation, 1977.

Uses of Television for Instruction: 1976-77. Washington, DC: Corporation of Public Broadcasting, 1979.

Using Instructional Media in Vocational Programs. In *Vocational Instruction.* Yearbook of the American Vocational Association. Washington, DC: American Vocational Association, 1979.

ERIC References (other than above):

ED 014 900
ED 015 673
ED 094 746
ED 125 533
ED 153 636
ED 164 745

PART IV

SAMPLE ORGANIZATIONAL ABSTRACTS

Part IV provides more detailed organizational information for a few major agencies and organizations. To be included in Part IV, the organization had to be: national, or multi-state; of interest to many program areas; and one of the major resources. These abstracts list the major functions, vocational areas, description, major products, and contact information.

SAMPLE ORGANIZATIONS

Aerospace Education Foundation

Major Functions:

Reproduces and distributes Air Force technical courses for civilian use.

Vocational Areas:

Technical education, industrial arts education, trade and industrial education, health occupations education.

Description:

The Aerospace Education Foundation reproduces and distributes Air Force technical courses for civilian use to colleges and corporations nationwide. Study guides, workbooks, instructor guides, hardbound books, and manuals as well as videotapes and slides are available. Program areas served are technical education, industrial arts, trade and industrial education, and health occupations education.

Products:

Catalogs, study guides, workbooks, videotapes, slides, instructor guides, hardbound books, manuals.

Address:

Aerospace Education Foundation
1750 Pennsylvania Avenue, N.W.
Washington, DC 20006
(202) 637-3370

American Association for Vocational Instructional Materials (AAVIM)

Major Functions:

AAVIM prepares and distributes instructional materials for vocational education. The center also selects and distributes developed by other agencies.

Vocational Areas:

All areas.

Description:

AAVIM is an interstate organization of universities, colleges and divisions of vocational education dedicated to the improvement of teaching through better information and teaching aids. AAVIM is a national center devoting full time to the preparation and distribution of instructional material for vocational education.

Products:

Vocational instructional materials such as catalogs, brochures, teacher guides, student workbooks, slide-cassette sets, transparency masters, filmstrips, handbooks, and resource guides.

Address:

AAVIM
Driftmier Engineering Center
Athens, GA 30602
(404) 542-2586

American Vocational Association (AVA)

Major Functions:

AVA exists to provide a comon focus for the concerns of a variety of vocational associations. AVA serves as a clearinghouse of information for vocational educators and a vehicle for concerned action to promote vocational education.

Vocational Areas:

All areas.

Description:

AVA is a confederation of professional associations with a national office as well as associations in every state. AVA's publications, annual convention and public information network promote interests of vocational educators. The organization provides a focus for dissemination of information, promotion of legislative activity, collaboration with the private sector, etc.

A sample of the organizations served is the following:

- ☐ American Association of Teacher Educators in Agriculture
- ☐ American Industrial Arts Association
- ☐ American Technical Education Association
- ☐ National Association of Classroom Educators in Business and Office Education
- ☐ Marketing and Distributive Education Association

- ☐ National Association of Health Occupations Teachers
- ☐ National Association of Trade and Industrial Instructors
- ☐ National Association of Vocational Home Economics Teachers

Products:

VocEd, The Journal of the American Vocational Association, published ten times a year; *Update*, a monthly newspaper for vocational educators; the *AVA Convention Program Guide*, published annually in connection with the AVA Convention; also yearbooks and public information releases.

Address:

American Vocational Association
2020 North Fourteenth Street
Arlington, VA 22201
(703) 522-6121
Also contact associations in respective states.

Association for Supervision and Curriculum Development (ASCD)

Major Functions:

Provides professional development experiences in curriculum and supervision.

Vocational Areas:

All areas.

Description:

The Association for Supervision and Curriculum Development (ASCD) is a professional organization of supervisors, curriculum coordinators, directors of curriculum, consultants, professors of education, classroom teachers, and administrators, and others. The major activities of ASCD are:

- ☐ professional development experience;
- ☐ information dissemination;
- ☐ encouragement of research, evaluation, and theory development;
- ☐ National Curriculum Study Institutes;
- ☐ annual convention.

Products:

Yearbook; booklets; *Update* and *Educational Leadership* (periodicals); Research Information Service (free to members).

Address:

ASCD
225 North Washington Street
Alexandria, VA 22314
(703) 549-9110

Council for Educational Development and Research (CEDaR)

Major Functions:

To improve and promote educational research and development and to demonstrate their importance for improving educational practice. Emphasis on programmatic research taking place within educational R & D organizations.

Vocational Areas:

All areas.

Description:

This organization was formed to serve as an umbrella organization for its (currently) eighteen member educational research and development institutions. It provides a forum for professional personnel in the member institutions and coordinates their national dissemination programs. The members are educational R & D organizations, which participate in research, development, evaluation, dissemination and technical assistance.

Products:

Monthly newsletter; *Educational R & D Report*, a journal published quarterly, *Directory*, published annually.

Address:

CEDaR
1518 K St., N.W.
Suite 206
Washington, DC 20005
(202) 638-3193

Educational Resources Information Center (ERIC)

Major Functions:

ERIC provides ready access to primarily unpublished and difficult-to-find documents in all areas of education. It does this through a variety of means, e.g., databases, abstract journals, microfiche, computer searches, online access, document reproductions, analyses and syntheses, etc.

Vocational Areas:

All areas.

Description:

ERIC is a national information system which obtains unpublished and difficult-to-find documents in all areas of education and makes them available to school administrators, teachers, researchers, information specialists, professional organizations and students. The system contains a network of clearinghouses in charge of acquiring, selecting, annotating and indexing current printed materials. The Clearinghouse for Adult, Career, Vocational and Technical Education is located at NCRVE. You can obtain literature searches and either microfiche or hard paper copies of reports in ERIC either from ERIC directly or from any one of literally hundreds of cooperating centers.

Products:

ERIC uses two abstract journals, *Resources in Education* (RIE) and *Current Index to Journals in Education* (CIJE). Another publication, the *ERIC Thesaurus*, is useful for conducting specialized computer searches. Each of the sixteen ERIC Clearinghouses publish state-of-the-art reports and interpretive summaries. Documents, both microfiche and hard copies, are available through ERIC Document Reproduction Service (EDRS).

Address:

National Institute of Education
(Central ERIC)
Dissemination and Improvement of
Practice Program
Washington, DC 20208
(202) 254-5500

Mid-America Vocational Curriculum Consortium (MAVCC)

Major Functions:

MAVCC develops needed curriculum materials that anyone of the member states would not likely to develop on their own.

Vocational Areas:

All areas.

Description:

MAVCC is a non-profit consortium of twelve member states formed to produce competency-based instructional materials. Manuals are available in student and teacher versions and include transparency masters, job sheets, criterion referenced tests, along with performance based objectives and information sheets. Learning activity packets and media are also available for selected manuals. MAVCC staff provides in-service and pre-service training to member and nonmember states.

Products:

Newsletter, instructional materials, catalogues, brochures, learning activity packets, media.

Address:

Mid-America Vocational Curriculum
Consortium
1515 West Sixth Avenue
Stillwater, OK 74074
(405) 377-2000

National Center for Research in Vocational Education (NCRVE)

Major Functions:

NCRVE's purpose is to aid diverse agencies, institutions, and organizations to solve educational problems related to vocational preparation and career planning, in compliance with the terms of national vocational education legislation.

Vocational Areas:

All areas.

Description:

NCRVE was formed in response to legislation under the Vocational Education Amendments of 1963. It is now administered by NIE. NCRVE addresses national and multi-state applied research and development, dissemination and utilization, information for planning and policy development, clearinghouse, and evaluation services.

The services performed by NCRVE include:

☐ Generating knowledge through research
☐ Developing educational programs and products
☐ Evaluating individual program needs and outcomes
☐ Installing educational programs and products
☐ Operating information systems and services
☐ Conducting leadership development and training programs

NCRVE provides a nationwide dissemination and utilization system to assist vocational education practitioners and product developers in finding, sharing, and using some of the best educational products available.

Products:

Vocational education products developed through research and development program improvement projects.

Address:

National Center for Research in
Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, OH 43210
(614) 486-3655

National Institute of Education (NIE)

Major Functions:

Sponsors educational research and development, monitors sponsored projects, and carries out dissemination activities to insure their maximum beneficial impact.

Vocational Areas:

All areas.

Description:

The objectives of the National Institute of Education include:

- ☐ to improve education for all persons, regardless of race, color, religion, sex, national origin or social class;
- ☐ to promote education as an art, science, and profession;
- ☐ to strengthen the scientific and technological foundations of education;
- ☐ to develop an effective research, development and dissemination system.

The budget and priorities of NIE depend on legislative mandate. To achieve its objectives, NIE:

- ☐ develops and issues requests for proposals;
- ☐ awards grants and contracts;
- ☐ monitors all sponsored projects
- ☐ promotes dissemination (e.g., sending exemplary and demonstration projects, hosting national conferences, etc.)

The NIE also sponsors and cooperates with a system of regional laboratories and centers for educational research and development.

Products:

Information concerning guidelines, handbooks, manuals and programs; brochures and fliers concerning current literature and ongoing projects; conference agendas and proceedings; project deliverables. Contact Office of Public Information.

Address:

U. S. Department of Education—NIE
1200 19th Street, NW
Washington, DC 20208
(202) 254-5800

National Education Association (NEA)

Major Functions:

Advocacy for teachers and other educators; promoting legislative activity; instruction and professional development; teacher benefits; teacher rights. A convention is held annually.

Vocational Areas:

All areas.

Description:

The largest national professional organization and union for educators. Its membership consists of: elementary and secondary school teachers, college and university professors, administrators, principals, counselors and others concerned with education. The organization provides a national forum for educators and a collective voice for their concerns.

Products:

Reporter, published eight times per year; *Today's Education*, a quarterly professional magazine; *Handbook*, published annually.

Address:

National Education Association
1201 16th Street, N.W.
Washington, DC 20036
(202) 833-4000

National Network For Curriculum Coordination in Vocational and Technical Education (NNCCVTE)

Major Functions:

NNCCVTE is established to provide an ongoing system for intra-state linking of curriculum with research, demonstration and teacher education; to arrange and plan for intra-state development and dissemination activities; to assist in establishing priorities for instructional materials development.

Vocational Areas:

All areas.

Description:

NNCCVTE consists of six Curriculum Coordination Centers and curriculum networks, 57 State Liaison Representatives and a national council of curriculum center directors. The aim of the 6 CCCs is to help state vocational educators and vocational teachers, counselors and administrators better meet the needs of business and industry for well trained and productive workers.

Products:

NNCCVTE Newsletter
NNCCVTE FACTSHEET
NNCCVTE Occasional Paper Series
NNCCVTE Impact Report (Annual)

Address:
East Central Network for Curriculum
Coordination
Sangamon State University
E-22
Springfield, IL 62708
(800) 786-6375

Regional Laboratories for Educational Research and Development (Generic Name)

Major Functions:
To participate in and promote educational research and development, evaluation, dissemination and technical assistance to other educational organizations and clients.

Vocational Areas:
All areas

Description:
NIE supports the system of regional educational laboratories, which assist NIE in its two major objectives of (1) disseminating important R & D outcomes to educational practitioners, and (2) identifying practitioner needs. The labs serve a variety of other regional R & D needs and functions for school districts, industries and private corporations, etc.

Several major regional labs are the following (states in which they are located in parentheses):

☐ Appalachia Educational Laboratory (West Virginia)
☐ Far West Regional Laboratory for Educational Research (California)
☐ Northwest Regional Educational Laboratory (Oregon)
☐ Research for Better Schools (Pennsylvania)
☐ Southwest Educational Development Laboratory (Texas)
☐ Southwest Regional Laboratory for Educational Research and Development (California)

Products:
Newsletters; brochures and fliers concerning current programs and services; technical assistance information; catalogs and price lists for available products; plus a wide range of literature, tests and other products stemming from research and development.

Address:
National Institute of Education
Washington, DC 20208

See also listings for each regional lab under their respective state (named above).

U. S. Department of Education

Major Functions:
Establishes policy for administrators and coordinates most federal assistance to education.

Vocational Areas:
All areas.

Description:
The U. S. Department of Education is a cabinet-level department for establishing policy and administering programs of federal assistance to education. Among the various offices of the department are the following:

☐ Bilingual Education
☐ Civil Rights
☐ Elementary and Secondary Education
☐ Educational Research and Improvement of Practice
☐ Vocational and Adult Education
☐ Special Education and Rehabilitative Services
☐ Postsecondary Education

The Office of Vocational and Adult Education is responsible for administration of grants, contracts, and technical assistance for vocational and technical education, comprehensive employment and training, education professions development, etc.

Products:
Information concerning guidelines, handbooks, manuals, and programs; brochures and flyers concerning current literature and ongoing projects; requests for proposals, and product deliverables.

Address:
400 Maryland Avenue SW
Washington, DC 20202
(202) 426-6573

Also, ten regional offices serve as centers for dissemination of information and providing technical assistance locally. They are located in Boston, New York, Philadelphia, Atlanta, Dallas, Chicago, Kansas City, Denver, San Francisco, and Seattle.

U. S. Department of Labor, Bureau of Labor Statistics (BLS)

Major Functions:
Gathers and publishes economic and statistical research for the Department of Labor regarding manpower and labor requirements, occupational outlooks, and other occupationally relevant information.

Vocational Areas:
All areas.

Description:
The Bureau of Labor Statistics (BLS) collects basic data from workers, businessmen, and from various governmental agencies through their voluntary cooperation. The research and statistics gathered depends on needs of various groups, including Congress and the federal and state governments.

Information is gathered in areas such as the following:

- ☐ manpower and labor requirements;
- ☐ labor forces;
- ☐ employment and unemployment;
- ☐ work hours;
- ☐ wages and other compensation;
- ☐ prices;
- ☐ productivity and technological development.

Products:
Press releases; periodicals (e.g., *Employment and Earnings, Current Wage Developments; Occupational Outlook Handbook;* etc.) special publications (e.g., *Jobs For Which You Can Train Through Apprenticeship), Occupational Outlook Reprints,* etc.; plus reports and releases from regional offices giving regional detail.

Address:
Bureau of Labor Statistics
U. S. Department of Labor
601 D Street, NW
Washington, DC 20213
(202) 655-4000

Also contact regional offices located in San Francisco, Kansas City (MO), Chicago, Boston, New York, Dallas, Philadelphia, and Atlanta.

U. S. Department of Labor, Employment and Training Administration (ETA)

Major Functions:
Provides assistance and training for job-seekers and special services for the unemployed and underemployed. Also helps employers by: locating, screening, and referring candidates; providing funds for training new employees; etc.

Vocational Areas:
All areas.

Description:
The Employment and Training Administration (ETA) is the federal agency with the mandate to set standards for programs under its supervision and to monitor them to see they are run according to regulations.

These programs include the following examples:

- ☐ Job Corps
- ☐ Veterans Employment Programs
- ☐ Research and Development
- ☐ Apprenticeship
- ☐ Employment and Trainig Programs for Youth (e.g., CETA)
- ☐ Career Information Systems
- ☐ Employment/Job Service

With the passage of the Comprehensive Employment Act (CETA) in 1973, the responsibility for operating programs has shifted to states, cities, counties and other local units, collectively called "prime sponsors." The newer legislation is entitled the Joint Training Partnership Act (JTPA).

Products:
Consumer Information Leaflets; brochures on apprenticeship programs; *WORKLIFE*, the official monthly journal of ETA; *Apprenticeship Now*, the U. S. Department of Labor's career guidance magazine; and numerous public information publications, such as:

- ☐ *ETA; Helping to Improve American Worklife*
- ☐ *The National Apprenticeship Program*
- ☐ *Apprenticeship and CETA Technical Assistance Guide*

Address:
Employment and Training Administration
U. S. Department of Labor
601 D Street, NW
Washington, DC 20213
(202) 376-6270

Also contact any of the ten regional offices of the Department of Labor in Boston, New York, Philadelphia, Atlanta, Chicago, Dallas, Kansas City (MO), Denver, San Francisco, and Seattle

U. S. Government Printing Office (GPO)

Major Functions:
The U. S. Government Printing Office (GPO) executes orders for printing and binding placed by Congress and the departments and establishments of the federal government.

Vocational Areas:
All areas.

Description:
GPO invites bids from commercial suppliers on a wide variety of printing and binding services, awards and administers contracts, and maintains liaison between ordering agencies and contractors. GPO also supplies paper and related commodities for all government activities. Catalogs are prepared and govern-

ment publications are distributed and sold through GPO.

Products:

Information sheet (*Document Sales*); monthly publications (*Selected U. S. Government Publications, Monthly Catalog of U. S. Government Publications*); thousands of government publications available through mail orders, Government bookstores, or depository library program.

Address:

Superintendent of Documents
U. S. Government Printing Office
Washington, DC 20402
(202) 783-3238 (orders)
(202) 541-3000 (general)

Vocational Technical Consortium of States (V-TECS)

Major Functions:

V-TECS was chartered in 1973 to produce valid, up-to-date vocational-technical materials for use in curriculum development, program planning, and program evaluation.

Vocational Areas:

All areas.

Description:

Using systematic development procedures, V-TECS members perform on-the-job task analyses of different occupations, validate the tasks through a survey of workers and from the tasks develop performance objectives with performance guides. The objectives and guides are further reviewed by user groups prior to publication. V-TECS membership includes twelve states and the U.S. Army, Air Force, and Navy.

Products:

Catalog of performance objectives and performance guides for over 90 different occupational titles.

Address:

Vocational-Technical Education
Consortium of States
Commission on Occupational Education
Institutions
Southern Association of Colleges and
Schools
795 Peachtree Street, N.E.
Atlanta, GA 30365
(404) 897-6158